G. R. S. App. F. IX-4]

1942-3.

W File No. 266-42

Previous References.

(War)

Serial Nos. 1 to 6

Later References.

W 148-43-1 to 4.

P-79

GENERAL AND REVENUE SECRETARIAT

Serial Nos. Six only

Part B for September 1943

SUBJECT.

A. R. P. Organisation in Madras.

J.M.Krishnan
7.9.43.

1193/W 1371/W

ARP Organisation. Memo

General and Revenue Secretariat

W File No. 266 of 1942-3. [App. F. III—2

MINISTER FOR LAW
NOV 3 1942
No. 3747

CHIEF SECRETARY
12 JUL 1942
GOVT OF MYSORE

Serial No.

1 From The ARP officer Bcty
ARP. 334/42 dated 6th Octr. 42 requesting
for 6 copies of the ARP Organisation for
Mysore for guidance
Submd for perusal with a
letter to the Resy for consideration

(RS) X/X

2 Issued No. Pol. 823 dt 15.x.42 to the Resy

3. From The Secy to the Hon'ble the Revenue
F. 3(22)-42/W dated 31st Octr. 42 stating that
the ARP Scheme for Mysore is under various
consideration with some three copies of the
Scheme & some such is ready
The revised Scheme for Class II & III Towns
will be sent to the DSP for perusal and return
if approved. It is stated that the Govt of Mysore
will send three copies of the ARP Scheme for
Mysore as soon as it is ready. Submd for
perusal with a draft to the DSP

RS 2/XI

CHIEF SECRETARY
2 NOV 19[illegible]
GOVT OF MYSORE

NOTE—Contn. Sheet.

WD 04155—GPB—55,000—23-1-41

Secretary 5/XI

8/11

4/11

1193
1371/W

ARP Organisation Memo.

W File No. 266 2650/W 2434/W of 1942-3.

General and Revenue Secretariat.

Serial No. 4

Issue 2044/W d 5th Nov. 42 & ult 28th

5

From the ARP Officer B City

ARP. 858/42/W d 8th March 43 relg to model Schemes for Class II & III and requesting to address the Govt to obtain 3 copies of the revised Scheme from the Govt of Madras.

The Govt wish to say that as Madras Govt Also that the ARP Scheme for Madras is under revision and that 3 copies will will be sent as soon as it is ready. So far 3 copies of the revised Scheme has not been received. Submd with a draft to the Govt for approval.

RS 10/3 Sec.

for Secy

Issued Pol 1809 dated 10th March 1943 to the Govt.

From Secy to Govt the Resident & DO No. 3(22)/43 dt 29-3-43 states that the revised A.R.P. Scheme for Madras will be ready shortly and that the requirements of Mysore Govt. are noted

Submd. for perusal. The receipt of the copies will be awaited

Sec 31/3/43.

for S.I.J.

B 8/4/43

C. F. No. 46]

W 266-42-1

GOVERNMENT OF MYSORE

1193 W.

Telegram / phone

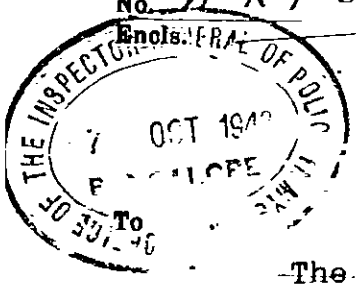
OFFICE OF

No. A. R. P. 334/42-43

Encls.

the A.R.P. Officer,

Bangalore City.



Date 6th October, 1942.

To

The Chief Secretary to the Government of
His Highness the Maharaja of Mysore,
Bangalore.

Through: The Inspector General of Police in Mysore,
Bangalore.

Sir,

I have the honour to request you to kindly get this office one copy of the A.R.P. Organisation done in Madras for guidance.

A requisition was sent to them direct from this office but it was not responded to.

N. dis Ac. 862/42-43

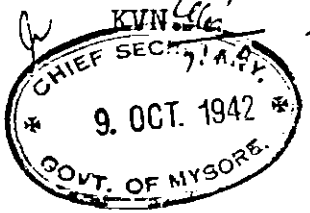
Forwarded with compliments

I have the honour to be,
Sir,
Your most obedient servant,

Deputy Inspector General of Police

A.R.P. Officer,
Bangalore City.

KVN.



War Proof

9/10

Appendix F G—1]

SUBJECT.....

.....

.....

Diary No. of letter replied to.....

General and Revenue Secretariat

( )

the *19*

Date of issue 15/10/42

Signed by Sher S. K. V.

List of enclosures.....

Copied by .....

Examined by .....

Section War

File No. 266-42

Serial No. 2.

No. Pol. 823

To

The Hon'ble the Home Member,

Sir,

I am directed to state that the Government will be obliged if you will be so good as to address the Govt. of Madras and get 3 copies of the scheme of ARP Organisation sent to Madras for the information of this Govt.

I have the

Chief Secretary Govt.

Pol. 823

13th Octr. 1942.
15

The Secretary to the Hon'ble the Resident
in Mysore, Bangalore.

I am directed to state that this Government will be obliged if you will be so good as to address the Government of Madras and get 3 copies of the scheme of the A.R.P. Organization in Madras for the information of this Government.

I have the honour to be,
Sir,
Your most obedient servant,

For Chief Secretary to Government.

No.F.3(22)-42/A. (Miscl.)

W 266-42-3. 1371

From

The Secretary to the Hon'ble W
the Resident in Mysore.

To

The Chief Secretary to
the Government of Mysore,
Bangalore.

Bangalore, 31st Oct. 1942.

31.

A.R.P. Scheme for Madras.

Sir,

I am directed to refer to your letter No.Pol.823, dated the 15th October 1942.

2. The Government of Madras write that the A.R.P. scheme for Madras is under revision and that they will send three copies of the revised scheme as soon as it is ready. A copy of each of their model scheme for Class II and III towns is enclosed.

I have the honour to be,
Sir,
Your most obedient servant,

SECRETARY TO THE RESIDENT.

KSln.

Appendix F G—1]

SUBJECT.....

.....

.....

Diary No. of letter replied to.....

Date of issue.....

Signed by .....

List of enclosures.....

Copied by .....

Examined by .....

Section

File No.

Serial No.

No.

To The I.G.P.

General and Revenue Secretariat

( )

the *19*

Sir, A.R.P. Scheme for Madras

With reference to your endorsement No. D.S. A.C. 862/42-43 dated 6th Oct. 42 forwarding a copy of A.R.P. Officer's letter asking for a copy of the A.R.P. Organisation in Madras. I am directed to state that it may here with be stated that the Govt. of Madras while the A.R.P. Scheme for Madras is under revision and that they will send three copies of the revised Scheme as soon

it is ready. I am to send
herein a copy each of their
model scheme for class II + III terms
for perusal. and return

J. L.

Chief Secretary for [illegible]

No 2044/W(Encls)
W 266-42-4.

5th Nov. 1 42.

Chief

The Inspector-General of Police in Mysore.

A.R.P. SCHEME FOR MADRAS.

With reference to your endorsement No.Dis.Ac. 862/42-43, dated 6-10-42, forwarding a copy of A.R.P. --- Officer's letter asking for a copy of the A.R.P. Organization in Madras, I am directed to state that the Residency have written to say that the Government of Madras write that the A.R.P. Scheme for Madras is under revision and that they will send three copies of the revised scheme as soon as it is ready. I am to enclose herein a copy each of their model scheme for Class II and III towns for perusal and return.

I have the honour to be,
Sir,
Your most obedient servant,

For Chief Secretary to Government.

C. F. No. 46j

W 266-42-5.

GOVERNMENT OF MYSORE

2650/W

Telegram / Telephone

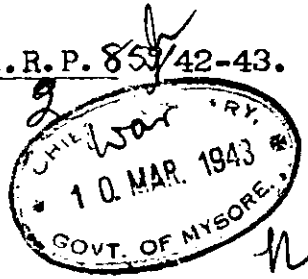
OFFICE OF

the A.R.P. Officer,

Bangalore City.

No. A.R.P. 859/42-43.

Encls 2



Date 8th March, 1943.

To

The Chief Secretary to the Government of Mysore,
Bangalore.

Through: The Inspector General of Police in Mysore, B'lore.

Sir,

A.R.P. SCHEME FOR MADRAS.

I have the honour to invite kind reference to your letter No.2044/W dated 5-11-1942, intimating that the A.R.P. Scheme for Madras is under revision and to request that the Residency may kindly be addressed to obtain 3 copies of the revised scheme from the Government of Madras.

Copies of Model schemes relating to Class II & III Towns received as enclosures with your letter under reference are returned herewith as desired.

Ac. 2653/42-43 9.3.43.

Forwarded with Compliments.

Inspector-General of Police.

I have the honour to be,
Sir,
Your most obedient servant,

A.R.P. OFFICER, BANGALORE CITY.

KVN.

Appendix F. G.—1]

SUBJECT.....

.....

.....

Diary No. of letter replied to. 2650.

General and Revenue Secretariat

( )

the *194*

Date of issue... 10. 3. 43

Signed by. Shri. S.K.V. Iyer

List of enclosures.....

Copied by.....

Examined by.....

Section

File No.

Serial No.

No. Pol. 1809 The Army Hqrs Simla & Rawal

To

ARP Scheme for Madras

Sir

I am directed to invite

Reference to your letter No F. 3 (22)-6p

& 31st Octr. 42 on the above subject

and to request that you ~~kindly~~

be so good as

to address the Govt of Madras

advising formally their final

and ~~fair~~ 3 copies of the revised

scheme for Madras ~~together~~

~~with information of this Govt~~ as it is

now drawn.

I have the

honour to

be Sir

Your obedient Servant

for Chief Secretary to Govt

No. 1809

GENERAL AND REVENUE SECRETARIAT,

Bangalore, 10th March 1943.

From

The Chief Secretary to the Government of His Highness the Maharaja of Mysore.

To

The Secretary to the Hon'ble the Resident in Mysore.

Sir,

A.R.P. Scheme for Madras.

***

I am directed to invite reference to your letter No.F.3(22)-42/W dated 31st October 1942 on the above subject and to request you to be so good as to address the Government of Madras and obtain for reference by this Government 3 copie of the revised scheme for Madras, if it is ready.

I have the honour to b
Sir,
Your most obedient servan

for Chief Secretary to Governme

W 266-42-6. 2824 W

No.F.3(22)-42/W.

From

The Secretary to the Hon'ble
the Resident in Mysore.

To

The Chief Secretary to the
Government of His Highness
the Maharaja of Mysore,
Bangalore.

Bangalore, 29th March 1943.

A.R.P.Scheme for Madras.

Sir,

I am directed to refer to your letter No.Pol.1809/War, dated the 10th March 1943.

2. The Government of Madras state that the revised A.R.P.Scheme for Madras will be ready shortly and that the requirements of the Government of Mysore have been noted.

CHIEF SECRETARY War 31. MAR. 1943 GOVT. OF MYSORE

I have the honour to be,
Sir,
Your most obedient servant,

for SECRETARY TO THE RESIDENT.

ksln.

MODEL SCHEME FOR A.R.P. IN CLASS III TOWNS.

A. *Lighting Restrictions.*—Already ordered separately.

I. *Preamble.*—This should contain a very brief account of the salient geographical features of the town and of the main occupations of the inhabitants, also the latest figures of the population. It should state whether there is likely to be any difficulty in manoeuvring fire engines, trailer pumps, etc., in any particular area, e.g., in Madura the difficulties that would be felt on account of the Masi and Veli streets being in the form of concentric squares without any direct cross roads. If it is felt desirable to include any adjacent areas not in municipal limits these should also be mentioned.

II. *Warden's Service.*—The basis on which this service should be organized is set forth very clearly in Appendix "C" to this note. Subject to any modifications which may be required by local conditions, these instructions should be followed in detail. If any modifications are required, the reasons for them should be clearly explained in this portion of the draft Scheme. The Scheme should also contain in tabular form the serial letters of each division or Group and against it a description of the area or areas covered by that Group, e.g., municipal ward, number and name, etc. Specially important installations or factories such as, for instance, the Madura Mills or some of the larger mills at Coimbatore may with advantage be treated as separate divisions and encouraged to build up from among their employees their own organization. Six to eight posts will comprise a Group and six to eight groups will comprise a Division. Each Post should be in charge of a Post Warden assisted by a Deputy. The maximum number of posts should not exceed ten to the square mile, but the actual number in each particular division will depend upon the geographical features and upon the intensity of population in the division. As far as possible all members of the Warden's Service should be volunteers, but it is realized that it may not be possible to stick rigidly to this, particularly when a state of acute emergency arises and each warden's post has to be manned for 24 hours a day. If it is found necessary, the Government are prepared to sanction two paid wardens for each Post and this should be borne in mind when preparing this portion of the Scheme.

Training of Wardens.—It is most important that wardens should be properly trained as required by the Basic Training Manual, of which a copy is enclosed herewith. It will be necessary therefore to select a suitable building or buildings for use as training centres where lectures may be given and examinations held. Wherever possible, the use of public halls and schools should be obtained for this purpose and if possible without incurring payment of rent. In towns of this class one such training centre should normally be sufficient, but more may be used if available free if there are special circumstances to warrant it, and it must be clearly understood that no travelling allowance is payable to wardens for attending courses of instruction.

Wardens' basic training should be carried out by the Special Officer and his Class III instructors, but if these are not sufficient they may be supplemented by a corps of lecturers, both European and Indian, enrolled for the purpose.

III. *Messenger Service.*—The numbers and equipment required are set out in Appendix B. For recruitment as messengers, Boy Scouts may be found extremely useful. But in recruiting such persons it must be remembered that no one under the age of 15 is entitled to full enrolment in the A.R.P. Services under the A.R.P. Services Ordinance and consequently not entitled to benefits of the War Injury Compensation Scheme. This does not prevent persons under 15 being employed, but in such cases care should be taken to obtain the written consent of the parent or guardian before any such juvenile is enrolled. In towns of this class where no telephone system is available the Government will be prepared to approve an increase in the number of messengers where necessary.

IV. *Control and Report Centres.*—The Control Centre is the "nerve-centre" of the whole organization and the greatest care must be taken to see that all those employed in it are thoroughly efficient and conversant with the duties they are required to perform. The organization and equipment required are set out in Appendix A. It should be pointed out that in that appendix in paragraph 6 (*a*) (i) the expression "Civil Defence Commissioner" occurs. This title is not used in this Province, where the functions are discharged by the A.R.P. Controller which will be the title conferred upon the Special Officer when the A.R.P. Service is formally embodied under the A.R.P. Ordinance. With reference to paragraph 3 of Appendix A, most of the towns in this class should not normally require more than one Report Centre, as the scale of equipment, etc., prescribed will not warrant it.

In Madras the Control Centre is in a room adjacent to the Telephone Exchange and it is suggested that wherever possible this principle should be followed in other towns as it will simplify the installation and working of the Control Centre telephone system. It must be stressed that there is a serious shortage in this country of telephone equipment and the greatest economy commensurate with efficiency in the use of telephones and equipment must be exercised.

The Special A.R.P. Officer will be in charge of the system of communications in the event of an emergency. There should be one Combined Control and Report Centre. It may be located either in the same building as the main A.R.P. Depot, in the centre of the town, or more preferably, in a separate building. It will consist of two rooms—the Message Room and the Map Room.

In the Message Room reception and transmission of messages will be dealt with. In class I and II towns provision has been made in this room for 5 " IN " message phones and 5 " OUT " message phones for the operators, a Message Supervisor and one indoor messenger. In class III towns it should not normally be necessary to provide for more than 2 or 3 " IN "—" OUT " telephones, respectively. The exact number will have to be decided by the Special Officer with reference to local conditions. An outdoor messenger room should be attached to this so that if communications break down, outdoor messengers could be utilized. Similarly, messages received through messengers could be handed in through the hatch into the Message Room, and there the appropriate number of copies taken and handed to the Message Supervisor. In those towns where no telephone facilities exist, the Message Room will have to be organized entirely on the basis of cyclist and runner messengers unless it is possible to use any form of visual signals, but even in this case the general lay out of the Control and Report Centres should be arranged as far as possible along the lines prescribed in these instructions.

The Map Room will be located next to the Message Room, a dividing wall being fitted between the two with two hatches one for " IN " and the other for " OUT " messages. Provision will be made in this room to accommodate a Chart Writer, Records Clerk, Talley-Board Clerk, Map Plotter and Messenger and the Officer in charge of the Report Centre. Representatives of the Essential Services consisting of the Police, Fire, Public Works department, Electricity, Water and Casualty Services will also be accommodated along with the A.R.P. Controller. These Heads of Services have to be provided with separate telephones. Where no telephones are available, adequate messenger service will have to be provided instead.

The Report Centre will be connected to such of the Wardens' Posts where telephones are available; otherwise the Messenger Service will operate. It should be manned day and night once a state of emergency is declared.

The warning will be received at the Control Centre from the Military authorities of the Air Raid Warning Zone in which the town has been included. The Air Raid Message Yellow will be passed on by the officer on duty through the Warning system.

Use should be made of existing sirens where possible. A sufficient number of extra sirens should be provided to ensure that the warning can be heard in all parts of the town.

NOTE.—The method by which Air Raid Warnings will be communicated by the Military will be the subject of a separate reference. Special instructions will be included in regard to those towns not connected to the Trunk Telephone system.

V. *Fire Fighting Services.*—It is presumed that the municipality already maintains some sort of fire fighting unit. In the smaller towns this may be sufficient if it is kept in efficient working order and manned by a properly trained crew. Following the procedure adopted in Madras, this unit, such as it is, should be taken over by the Special Officer and a properly trained crew should be recruited under the control of a Fire Master. Each such crew should consist of one paid driver, one paid foreman, two paid firemen and four voluntary Auxiliary Fire Service men. In towns where no such unit exists or where the existing unit is considered to be insufficient, a careful survey should be made of the town and the number of new units required should be decided and indented for without delay. In this connection particular attention will have to be paid to the existing water supply and to the number and efficiency of existing fire hydrants. It must be remembered that the Trailer Pumps which will be supplied have a delivery of up to 300 gallons per minute and the mains must be capable of supplying the quantity of water and of standing up to the pressure that delivery at this rate involves. It is probable that at least in some parts of the town, mains will not be able to cope with this pressure and it is therefore necessary to take steps to obtain access to temple and other tanks, irrigation channels, and even to provide special reservoirs of say 5,000 gallon capacity at various points in the town. Entry to the temple tanks and private wells can be enforced under rule 76 of the Defence of India Rules, powers under which have already been delegated to District Magistrates. The town

should be divided into Air Raid Zones according to the fire risks involved and to each of these zones, one Trailer Pump should be allotted. Each unit will require, in addition to the crew mentioned above, two cyclist messengers.

Street Fire Parties.—It is not proposed to recruit these in class III towns at present. This question will be reconsidered when equipment becomes available.

VI. *First Aid.*—It is not considered necessary in towns of this class to provide for fixed first aid posts. Instead, according to the size of the town, a number of mobile first aid parties should be provided. For details please see copy of the Government of India, Civil Defence Department, Letter No. 78/309/41-A.R.P. (Medl.), dated 11th November 1941 (copy enclosed). The local Government hospital will be the base hospital to which these mobile First Aid Parties will evacuate serious casualties.

The Government understand that in several of the towns included in this class, there already exist branches of the St. John's Ambulance Brigade and they should be asked to take up this work. The Surgeon-General has been addressed on this point and he has also been requested to take action to provide the local Government hospital with necessary extra medical equipment.

VII. *Rescue Services.*—The organization of these are given in Appendix G. One party should be sufficient for each of the towns in this class and it is suggested that a local Public Works department or local fund contractor should be asked to provide the staff and equipment. Government would, however, be prepared to consider paying cost of any specialized equipment necessary.

VIII. *Combined depots.*—The Special Officer will have to decide on the most convenient arrangement of those depots having regard to the most suitable divisions into which the town can be split up for the purpose. At each depot, the First Aid Parties, Ambulances, Rescue Parties and Fire Fighting Service Units for that particular division will be stabled. The organization and method of working of these depots are set out in Appendix H. As far as possible Depots and Report Centres should not be combined in the same building, and adequate accommodation will have to be selected for both purposes. If no suitable buildings are available in any particular division of the town, it will be necessary to construct them and estimates for this purpose should be prepared and submitted without delay.

IX. *Decontamination Service.*—For the present it is not considered necessary to make any elaborate arrangements for dealing with gas in Class III areas. This service may therefore be ignored for the present.

X. *Essential Services.*—These are (1) Water-supply, (2) Electric supply, (3) Telephones system and (4) coal gas, if any such installation exists. The maintenance and protection of these services is the duty of the municipality or company operating them who should be required immediately to prepare schemes accordingly. It is probable at least in the case of municipally controlled essential services that the municipality will object on the ground that they have not got sufficient funds. This excuse cannot and must not be accepted. The municipality must proceed with the necessary schemes and if it is indeed a fact that the municipality really cannot afford to finance the measures the fact should be reported to Government and the possibility of Government assistance to the municipality will be considered on the lines which have been worked out in conjunction with the Corporation of Madras. For essential services, all repair stores and equipment should be thoroughly overhauled and maintained at 25 per cent above normal requirements.

XI. *Structural precautions against high explosive bombs.*—Copies of the Government of India, Home Department, Letters No. 78/45/40/A.R.P., dated 3rd March 1941, 16th June 1941, and 8th July 1941, on the subject are enclosed. For the present in class III towns these precautions should be confined to the Control Room only.

XII. *Transport.*—It will be clear from the foregoing that a considerable number of motor lorries, buses and cars will be required for the various services. In class III towns these vehicles should as far as possible be obtained by arrangement with owners of buses, lorries and private cars. Except where no other course is open, purchase of new vehicles must be avoided in view of shortage of stocks and military requirements. Owners should be asked to volunteer to lend some of their vehicles for A.R.P purposes and in such cases the following payments will be made :—

For an A.R.P. practice.—Rs. 6 a day payable to the owner of the vehicle and As. 8 to the driver.

For an Air Raid.—Rs. 12 a day to the owner and Rs. 1-8-0 to the driver.

A refund of 25 per cent of the quarterly tax will also be given for each bus or lorry earmarked for A.R.P. purposes. For the conversion of motor buses (which must of course be of the closed pattern) into use as ambulances, a very simple devise known as the Berridge equipment adopted in Madras has been found to be extremely satisfactory. Copy of Memorandum No. 480-W/41-23, Public (A.R.P.), dated 11th October 1941, on the subject and its enclosures are enclosed. If a sufficient number of vehicles are not forthcoming on a voluntary basis the District Magistrate should report the fact to Government with the request for powers to requisition such extra transport as is required.

XIII. *Subsidiary schemes.*—May be omitted for the present except for Port Installations.

XIV. *Control of traffic in air raid.*—A copy of the notification now in force in Madras for control of traffic during air raids is enclosed and it is suggested that it should be adopted as it stands.

XV. *General control.*—The District Magistrate will be in general supervisory charge with the Special Officer as his executive assistant when the town concerned is the district headquarters. In other cases the Subdivisional Magistrate will be in general supervisory charge. The Special Officer will normally correspond through the District Magistrate or the Subdivisional Magistrate as the case may be.

Masulipatam Cuddalore Mangalore	District Magistrate.
Negapatam Tuticorin Mandapam Conjeeveram Rajahmundry Cannanore Tellicherry	Subdivisional Magistrate.

XVI. *A.R.P. Ordinance.*—A copy of the A.R.P. Services Ordinance and the rules framed thereunder are enclosed. As soon as it is possible to estimate with any reasonable certainty, the numbers to be enrolled in the A.R.P. Service for the time, the fact should be reported to Government in order that the formal appointment order required by the Ordinance may be issued. Information about the scheme for compensation under the War Injuries Scheme and Regulations under the War Injuries Ordinance, 1941, will be forwarded as soon as the scheme is finally approved by the Government of India and brought into force.

XVII. *Shelters.*—Slit trenches should be made for as large a part of the population as necessary up to 25 per cent. Special attention should be paid to the provision of trenches near the railway stations.

XVIII. *Maps.*—Maps of the town on a scale not smaller than 10 inches to a mile should be prepared for use in the Control Room, Special Officer's office, etc. The map should show the wardens divisions, posts, etc., location of combined depots, first aid posts, etc. Two copies of the map should be furnished to Government. If maps of the required scale are not available the Survey department should be asked to prepare them at once.

XIX. *Instructional staff.*—Two class III instructors have already been sanctioned. More may be necessary and proposals should be submitted as and when necessary. It is possible that staff officers will also be necessary and a copy of the Government of India's instruction is enclosed. It must however be clearly understood that while Government will sanction any staff that is really necessary, the greatest economy is necessary and the maximum use must be made of voluntary help.

APPENDIX A.

Control and Report Centres:

1. *Control.*—A responsible officer should be placed in charge of the A.R.P. Communications system. In addition to the planning of Control and Report Centres he should be responsible for the enrolment, organization, administration and training of the personnel.

2. *Number of Control Centres.*—There should be a Control Centre which should preferably be combined with the Report Centre in every Class I and II town.

3. *Number of Report Centres.*—It has been found that one Report Centre can under severe raiding conditions, cope with the traffic of approximately 50 Warden posts, provided the Wardens are trained only to send messages.

4. Provided the Wardens Service is organized on the basis of not more than 10 posts to the square mile there should, therefore, be only one Report Centre per 50 posts or less. If there are substantially more than 50 posts the matter should receive special consideration by an experienced A.R.P. Officer and a technical officer of the Posts and Telegraphs Department.

In any case the Control Centre should be combined with one of the Report Centres—[*See* Annexure (*a*)].

5. *Size of Control and Report Centres.*—*See* Annexure (*a*).

6. *Number of telephones.*—

(*a*) Exchange telephones—

(i) Control Room—
1 for (Civil Defence Commissioner A.R.P. Controller).
1 for each head of A.R.P. service in Control Room.

(ii) Report Centre—
1 for officer in charge.

(iii) Message Room—

Town of	41—50	Wardens posts in which there	are telephones	6 In 6 Out
Do.	31—40	do.	do.	5 ,, 5 ,,
Do.	19—30	do.	do.	4 ,, 4 ,,
Do.	10—18	do.	do.	3 ,, 3 ,,
Do.	6— 9	do.	do.	2 ,, 2 ,,

1 Special for Warnings.

(*b*) Direct line telephones—

(i) In Control Room—
1 to Military Headquarters.
1 to District or Provincial Government.

(ii) In Message Room—
1 to each Fire Station if Head of Fire Brigade has his Headquarters in Control Room.
1 to Fire Brigade Headquarters if Fire Headquarters is elsewhere than in Control Room.
1 to Police Headquarters.
1 to each Report Centre as necessary or Group Headquarters if established.

7. *Additional accommodation.*—Apart from the operational rooms of the Control and Report Centre, the following additional accommodation should be provided:—

(*a*) Feeding for personnel on duty.

(*b*) Rest Room.

(*c*) Sleeping for those on duty who are not expected to remain awake until the 'action' warning is received and for that proportion of other shifts who for any reason are unable to remain at their homes.

* (*d*) Shelter for any staff over and above those on duty in the Control and Report Centres.

(*e*) Lavatory.

8. *Protection of the Control and Report Centres.*—The Control and Report Centres should be protected against the blast and splinter effect of high explosive bombs and against the fall of debris caused by the collapse of upper storeys; it should be capable of being made gas proof.

9. *Ventilation.*—Unless natural ventilation is possible it is necessary to provide an air conditioning plant supplying cool air in the hot weather. The air should be capable of being passed through a gas filter.

In some places it may be necessary to provide for heating in the winter.

10. *Lighting.*—An emergency lighting system should be installed.

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* Only for towns where permanent paid personnel are authorized.

11. *Personnel.*—The establishment for Report Centres of various sizes is given in Annexure (*b*), attached: 2 shifts are necessary where paid personnel are authorized. A reserve of 100 per cent should be trained.

12. *Equipment of Control and Report Centres*—(*a*) *General equipment.*—This is given in some detail in A.R.P. Memorandum No. 6 (2nd edition).

(*b*) *Personal protective equipment.*—One Civilian Duty Respirator per person 25 per cent. This is only to be supplied when the Control or Report Centre is not capable of being made gas proof.

ANNEXURE (*a*).

Guide to size of Control and Report Centres.

Number of Wardens posts in area.	Control Room assuming four Services Representatives.	Officer in charge of Report Centre and Map Room.	Message Room.	Approximate number of "IN" and "OUT" telephones in Message Room.		Number of messengers at one relief.	Message Room.
	FEET.	FEET.	FEET.	IN	OUT		SQ. FT.
41—50 posts	20 × 15	20 × 15	15 × 15	6	6	15	240
31—40 posts ..	20 × 15	18 × 15	12½ × 15	5	5	12	180
19—30 posts	20 × 15	18 × 15	10 × 15	4	4	12	180
10—18 posts	20 × 15	15 × 15	8 × 15	3	3	6	150
6— 9 posts	20 × 15	15 × 15	8 × 15	2	2	5	120

These rooms should preferably be combined. If this cannot be conveniently arranged they should adjoin with direct communication.

ANNEXURE (*b*).

REPORT CENTRE.

Detail of one shift.

Detail.	In town having Warden posts to the number of					Male or female.
	41—50	31—40	19—30	10—18	6—9	
Officer-in-charge	1	1	1	1	1	Male.
Intelligence Officer	1	1	1	..	..	Male.
Plotting Officer	1	1	1	1	1	Male.
Chart writer	1	1	1	..	..	Male or female.
Tallyboard clerk	1	1	1	1	1	Male or female.
Message clerk for Officer i/c	1	1	1	1	1	Male or female.
Clerks, to assist Controller and Heads of Services (in Control room only) ..	2	2	2	1	1	Male or female.
Record clerk	1	1	1	1	1	Male or female.
Message Superintendent	1	1	1	1	1	Male or female.
Telephonists *	12	10	8	6	4	Male or female.
Messengers for internal duties	2	2	2	2	2	Male.
Total on shift ..	24	22	20	15	12	

* The establishment of telephonists should be decreased to the number of "in" and "out" telephones required for the number of Wardens posts which have telephones—Vide paragraph 6 (III) of Appendix B. Since, however, messages will be received from messengers in original, arrangements must be made for copyists to make the required number of copies for use in the Control and/or Report Centre.

APPENDIX B.

Outdoor Messenger Service.

1. Outdoor messengers are an essential part of the Air Raid Precautions Organization and provide an alternative means of communication in case of a breakdown of the telephone service.

2. They are required to provide communication from the Wardens Posts to the Report Centre and from the Report Centre to Wardens Posts, Air Raid Precautions Depots, First Aid Posts, etc., and also to the next higher authority.

2. *Control.*—The Officer-in-charge, Communications, is in general charge of this service. He will generally require a Staff Officer or Messenger Commandant, who should be responsible under his direction for the organization, administration, enrolment, training of the service and the maintenance of records. He should be provided with the necessary clerical staff.

3. *Numbers required.*—The following establishment is suggested:—

For each Control and Report Centres .. ..
For each First Aid Post .. ..
For each A.R.P. Depot, ambulance station, etc. .. ..
For each Warden's Post .. ..

* Where two telephone orderlies are employed

Amended - Vide
Public (Civil Defence) Dept.
Endorsement No. 14285/42-1,
dated 22nd March 1942.

A reserve of 50 per cent of the establishment should be enrolled and trained. Full use of the Boy Scouts Organization should be made.

The numbers required for the Fire Service require special consideration in the light of local conditions. Messengers for the Fire Service should form part of that service and not of the Messenger Service.

4. *Equipment*—

1 bicycle—Per each messenger. A proportion of motor bicycles may be necessary when the Wardens Service relies on the use of messengers for posts where no telephone exists.

1 steel helmet
1 civilian duty respirator } per messenger.
1 eye shield

5. *Accommodation.*—Messengers should be considered when providing accommodation at Wardens Posts, Depots, Report Centres, etc.

APPENDIX C.

I. The Air Raid Wardens' Service.

1. *Wardens' post.*—The unit of organization for a wardens' service is the wardens' post which should serve several sectors each comprising a resident population of about 500.

2. The post should be in a prominent position in order that it can easily be found by wardens and members of the public. It should be sited as near as possible to the centre of the group of sectors which it serves.

3. The wardens' post is the place at which wardens allotted to the sectors served by the post and who are detailed to come on duty on the "action" Air Raid Warning being sounded would assemble. It is also the place from where they would telephone or send messages to the Report Centre. It may be that some of the sectors served by the post will be found to be too far from it to admit of the wardens residing in those sectors to proceed to the post before bombs might be expected to fall. Wardens of those sectors would assemble at a pre-arranged place in those sectors.

4. The post should be large to provide either in the same premises or nearby

(*a*) a message room in which should be a telephone if possible and necessary furniture. This room should be capable of affording protection for the wardens using the room against blast and splinters of high explosive bombs, protection against the fall of debris;

(*b*) room for the storage in war of the equipment of the wardens who are to report at the post;

(*c*) in the case of towns having paid personnel or the authorized establishment—sleeping accommodation for those wardens on duty (two at the most sleeping and one awake) at night; and

(*d*) lavatory accommodation.

For those wardens who may have to report to a pre-arranged place in the sector for which they are responsible a small shelter should be provided. Their equipment being kept at the house of a selected warden in the sector, preferably near the shelter.

NOTE.—(Where suitable existing premises have not been obtainable, concrete posts have been constructed at home.) Their approximate internal dimensions are 6 feet by 9 feet. A post of this size does not afford all the accommodation mentioned above, the remainder is found in the vicinity or special huts are erected.

5. The post should be provided with means of boiling water and have some form of heating apparatus in winter.

(NOTE.—Only for towns authorized a paid establishment.)

6. Provision should also be made for a room where the post warden can give instruction to the wardens of the post area. It may be found satisfactory and possibly more economical to group a number of posts for this purpose.

II. Spacing of Wardens' Posts.

1. A maximum of about 10 posts to the square mile should be sufficient to meet requirements in fully built up and densely populated areas. It being understood that in the less densely populated parts and on the outskirts of towns the spacing of posts would be more sparse.

2. The A.R.P. authority, having determined the number of posts and their location on the principles laid down above, should proceed to select the premises to be used. In exceptional cases it may be found necessary specially to construct a post or a number of posts.

III. Numbers of Wardens.

1. The establishment is 4 wardens per 500 population in important urban areas and a lower proportion for other areas.

Additional persons up to 50 per cent of the authorized establishment should be enrolled and trained in order to provide a reserve to be called upon in case of need.

2. Where there are large blocks of flats and tenements with more than say 50 to 100 residents, special wardens should be appointed for each block (chosen from those living or employed in the premises where possible) and these wardens could be of assistance to the wardens in the posts in the streets. The sector worked from the post could in such circumstances contain more than 500 residents.

3. While wardens organized by industrial, commercial and public utility undertakings do not, as such, form part of the public wardens service, they should have a sound knowledge of the working of the local A.R.P. scheme. The managers of such undertakings should be informed that all messages for assistance should be sent through the wardens' post and not direct to the Report Centre. Exception to this rule should be made in the case of category A and category B factories.

IV. Organization of the Wardens' Service.

1. A responsible officer should be deputed to exercise supervision and control of the service.

2. The executive head of the wardens' service should be a chief warden, who will require a deputy. These officers should not be paid officials, but will be volunteers as are other members of the wardens' service.

3. The number of subordinates whom the Chief Warden will require will depend on the total number of posts under his control. Posts should be organized in groups of 6—8 posts each under a Head Warden. Where there are more than eight groups they should be organized in Divisions containing 6—8 groups each under a Divisional Warden.

The post should be placed in charge of a Post Warden and a Deputy Post Warden appointed to assist him and to act as his relief. The Post Warden will be in charge of the wardens in the post area.

4. Each group of posts should be distinguished by a letter. The posts belonging to a group will be indicated by that letter, coupled with a number—thus one group of posts would be Group A and the posts in the group would be numbered A-1, A-2, A-3 and so on. It is preferable, for purposes of reporting in war, that the numbering series A-1, A-2, etc., should be the numbers of the *posts*, not of the sectors, which may be otherwise distinguished, e.g., where more than one sector is attached to post A-1, the sectors might be known as sectors A-1 (*a*), A-1 (*b*), etc.

5. Where the wardens, in the area of any one Chief Warden are organized in more than four groups it is desirable that there should be, as a paid appointment, an officer whose principal duty it would be to foster the efficiency of the wardens' service, in addition to taking charge of the routine duties of training and organization. This officer should act as Chief Assistant to the Chief Warden. In areas large enough to have the wardens' groups organized in divisions, a similar Divisional Assistant should be appointed to assist the Divisional Warden.

These Assistants should be provided with such clerical assistance as is required for maintaining proper records, etc.

6. The Chief Warden, Divisional Warden, Head Warden and Post Warden should take part in arranging for the recruitment and training of wardens, and should be responsible for allotting them to posts and arranging rotas of duty, replacement in cases of sickness or injury, and so on. With the exception of the Post Warden, they would not, however, constitute a chain of communication in time of air raids, the individual wardens would send their reports direct in accordance with the local instructions and not through their Head, Divisional or Chief Wardens.

V. Equipment.

(*a*) Post equipment—

One First Aid box containing—

Bandages, triangular	9
Canes, for tightening improvised tourniquets	3
Dressing, shell	6
Dressing, First Field	6
Ointment, anti-gas, 2 oz. tins or jars	2
Safety pins (large), cards of 6	3
Scissors	1 pair
Tourniquet	1

One stirrup pump—Handbell.

(*b*) Wardens equipment—

One card of appointment.
One armlet.
One badge.
One civilian duty respirator.
One eye shield.
One steel helmet.
Manuscript for making reports
One electric torch.
One whistle.
One hand rattle.

VI. CARD OF APPOINTMENT.

Wardens should be provided with a card of appointment as evidence of their *bona fides* in their dealings with people in their sectors. An A.R.P. Badge or armlet is not evidence of authority to act as a warden. A suggested form of card, which should be signed by the officer in control of the wardens' service is given below. It is advisable that a photograph of the warden should be placed on the back of the card and stamped with a seal of the A.R.P. authority concerned.

NAME OF AIR RAID PRECAUTIONS AUTHORITY.

Air Raid Precautions.

This is to certify that ..... (*name and address of warden*) has been duly appointed as an Air Raid Warden. This is his authority to carry out the duties laid upon wardens by the (name of A.R.P. authority).

(Signed) .....

Officer-in-Charge, Wardens' Service.

Date of issue of card .....

Date of appointment of warden .....

Signature of Warden .....

APPENDIX D.

First Aid Posts.

1. *Control.*—The Officer-in-Charge, the Casualty Organization, is in general charge of the First Aid Post Organization in peace and war. Where there are more than three First Aid Posts, he should have, to assist him, a staff officer or First Aid Commandant who should be responsible under his direction for the organization and administration of the posts, the enrolment and training of the personnel, and the maintenance of records. He should be provided with the necessary clerical staff. This officer would be in command of the First Aid Post Organization after receipt of the preliminary warning.

When the Casualty Organization is so small as not to need a staff officer for each Casualty Service, e.g., First Aid Post Organization, Ambulance Service and First Aid Party Service it may be possible for the officer-in-charge of the Casualty Organization to be personally responsible for the above matters in respect of all these services. In some instances one Staff Officer for all these services would be sufficient assistance.

Each First Aid Post should be in charge of a doctor. He will be directly responsible for the efficiency of the First Aid Post personnel.

2. *Function of a First Aid Post.*—First Aid Posts are designed to receive persons suffering from comparatively minor injuries and in some instances lightly wounded or unwounded gas contaminated persons.

It is intended that First Aid Posts should deal with light as distinct from serious cases, e.g., cases requiring treatment which can properly be given initially by personnel trained in First Aid.

Serious cases, e.g., cases calling for urgent medical or surgical attention, such as may be obtained only at a properly equipped hospital, would derive no further benefit from further first aid treatment after having received attention from the First Aid Party and might indeed suffer by delay. Such cases should accordingly be sent direct to hospital and should not pass through a First Aid Post at all.

Any stretcher case should be placed in an Ambulance brought as near as possible to the incident and sent direct to hospital; walking cases, and those able to travel in a car for sitting cases should be directed to a First Aid Post.

3. *Spacing of posts.*—The normal rule is that adjacent posts should be less than two miles apart so that no casualty would have to go (as he walks not as the crow flies) more than a mile to reach a post.

4. *Size of First Aid Posts.*—The size of a post (large, medium, or small) should depend on the population within the area to be served by the post, and on the fact that the more vulnerable areas require more provision than the less vulnerable areas.

The following is given as a guide:—

Population in area of post.	Size of post.
30,000—60,000	Large.
20,000—30,000	Medium.
3,000—20,000	Small.

5. *Layout of First Aid Posts.*—The rate of flow of patients through each type of First Aid Post, type plans, and description of post is given in detail in Home Office (A.R.P. Department) letter No. 701513/8, dated 26th April 1938, "First Aid Posts"—*See* Annexure (*a*) to this appendix. This should be modified to Indian and local conditions.

The Cleansing Station should only be provided where it has already been authorized by the Central Government.—A shelter for the staff should also be provided.

6. *Personnel.*—It is suggested that the establishment of the post should be approximately as follows:—

Large post	30
Medium post	20
Small post	15

There will be a doctor in charge of each First Aid Post and his staff will include at least one fully trained nurse in addition to first aid workers, stretcher bearers, required for work within the posts and not in the streets, door-keepers, clerks, storemen, etc.

A reserve of 25 per cent should be enrolled in order that casualties may readily be replaced.

7. *Medical equipment of First Aid Posts—*

REVISED SCALE OF MEDICAL STORES AND EQUIPMENT FOR FIRST AID POSTS.

(Vide Appendix D, paragraph 7.)

Medical.

Item.	First Aid Post. Small medium.	First Aid Post. Large.	Percentage of reserve.	Remarks.
(1)	(2)	(3)	(4)	(5)
Acreflavin .. .. Tab.	25	50	50	Substitute Eusol, 1gal. for small post.
Lysol, 8 oz. bottle	1	1	50	....
Liquor iodi mitis .. .. .. oz.	4	8	50	Substitute Picric acid sol. 5 per cent in alcohol, oz. 8.
Morphine Sulph., ¼ gr. 1 c.c. ampoules boxes of 6 .. .. Boxes.	1	2	50	....
Nikethamide, 1·7 c.c. ampoules, boxes of 5. Boxes.	1	2	50	....
Liq. Adrenalin Hydrochlor. .. .. oz.	1	1	25	....
Oleum ricini .. .. oz.	1	1	25	....
Spt. Ammon. Aromat. .. .. .. lb.	1	2	50	....
Sodii Bicarbonas .. .. .. oz.	8	8	50	....
Sera A.T.S. ampoules	3	6	50	....
Tannalep 4 oz. tubes (substitute "Tannafax").	2	4	25	....
Unguentum Atropinæ (1 per cent in ½ oz. tubes).	1	2	15	....
Spirit, methylated, mineralised .. Pints.	4	8	50	....
Chloroform .. .. oz.	4	8	25	....
Aether .. .. oz.	8	16	50	....
Drop bottle 1	1	2	15	....
Mask	1	1	..	....
Airway—Medium I.R.	1	1	..	....
Clip Tongue (cross action)	1	1	..	....
Mouth gag (Doyen)	1	1	..	....
Procain 1 per cent 3 c.c. ampoules	3	6	25	....
Bandages, loose wove, 4" × 6 yards	100	200	75	....
Bandages, loose wove, 2½" × 6 yards.. ..	100	200	75	....
Bandages, triangular	18	36	50	....
Bandages, many tailed	3	6	15	....
Dressing, First Field	25	75	100	....
„ shell	10	30	75	....
Gauze, absorbent, 25" wide in pkts. of 3 yards folded .. .. Pkts.	6	18	50	....
Lint cotton., absorbent in 1 lb. pkts. ..	1	2	50	....
Do. 4 oz. pkts. ..	4	8		
	2 lb.	4 lb.		
Wool., cotton, absorbent 1 lb. pkts. .. lb.	2	6	75	....
Do. non-absorbent .. .. lb.	2	4	50	....
Plaster, adhesive, zinc oxide, 3" × 10 yards spool .. .. Spools.	1	2	50	....
Needles, assorted	6	12	25	....
Silk, surgical braided, sterilized, No. 3 (T) in vial.	1	2	25	Substitute silk thread in hank.
Catgut, sterilized plain size 'O' 5 feet strand in tube.	1	2	25	Substitute cotton thread as prepared by the Cruickshank technique.
Forceps, aretery 5"	* 4	8	..	....
„ dissecting	* 1	2	..	....
„ sinus 7"	* 1	2	..	....
„ dressing	* 1	2	..	....
„ (sterilizer) Cheatles	1	1	..	....
Probe	* 1	2	..	....

* Per Medical Officer on duty only.

Item.	First Aid Post. Small/Medium	First Aid Post. Large.	Percentage of reserve	Remarks.
(1)	(2)	(3)	(4)	(5)
Scissors, surgical	* 1	2	..	....
Scalpel	* 1	2	..	....
or				
Knife B.P., handle	1	1	..	....
,, blade No. 22	3	6	25	....
Splinter forceps	* 1	1	..	....
Tongue Depressor, metal	* 1	2	..	....
Surgeon's overalls	..	..	..	One per medical officer on duty and one per nurse on duty.
Surgeon's rubber gloves size .. .. pairs.	1	2	15	....
Scissors, stretcher bearers' (7" long, 1 blade pointed, 1 blade blunt).	2	4	..	....
Catheter No. 8 I.R.	1	1	..	....
Razor, common	1	1	..	....
Strop, leather	1	1	..	....
Hair clipper	1	1	..	....
Syringe, hypodermic 2 c.c. with 2 needles in case.	1	2	25	....
Syringe Record, 10 c.c. with 2 needles, in case.	1	2	15	....
Syringe hypodermic needles, spare, for 2 c.c.	4	8	25	....
Do. 10 c.c. ..	2	4	15	....
Medicine Glass, 2 oz.	1	1	..	....
Pins, safety, tins of 36	1	3	75	....
Tourniquet	2	4	10	....
Splinting, Gooche's wood 24" × 18" pieces ..	2	4	50	....
Splints, arm, wood, plain sets of 8	1	1	15	....
Splints, knee, Thomas's without foot-pieces ..	3	6	15	....
Splints, Liston's Long, sets of six	2	4	25	....
Splints posterior, wood with a foot-piece ..	4	8	15	....
Straps and buckles for splints .. .. .. doz.	2	4	25	....
Bath, eye, glass	1	2	..	....
Eye shades	3	6	25	....
Irrigator, E.I., 2 pint, Complete	1	2	..	....
Hot water bottle I.R. 12" × 8"	2	4	25	....
Sterilizer, fish kettle with lamp complete, size 15" × 5" × 4".	1	2	..	....
Stoves, paraffin, "Primus" 1 burner ..	1	2	..	....
Basin, dressing, E.I., Kidney-shape 10 in. ..	2	3	..	....
Bowl, E.I., 8 in.	2	2	..	....
Jug, measure E.I., graduated 1 pint	1	1	..	....
Jar, dressing 10" × 7" E.I., with cover ..	2	3	..	Substitute any tin container with a tight-fitting lid.
Tray, dressing, E.I., 11" × 9" × 2"	1	2	..	....
Basin, E.I., washing, 14"	2	4	..	....
Bedpan	1	1	..	....
Bin, ash, large	1	2	..	....
Bottle, urine, E.I.	1	1	..	....
Brush, nail, ward	1	2	..	....
Cup, feeding, E.I.	1	2	..	....
Mug, enamelled	3	6	..	....
Pail, zinc	1	2	..	....
Table with trestles size	1	2	..	....
Pair of trestles	1	1	..	....
Lamp, hurricane	..	..	..	One hurricane lamp per room and one petromax in dressing room.
Candles	6	6	10	....
Matchboxes	6	12	10	....
Towel, hand, size	4	8	25	....
Soap, hand, cakes	2	4	75	....
Soap, washing .. .. lb.	1	1	50	....
Floor mop—short handle	1	1	..	....
Stretchers, ambulance (standard Army Pattern).	6	6	..	....
Sheets water proof width 36' .. .. .. yds.	3	6	..	....
Blankets	12	12	25	....
Crutches .. .. pairs.	2	3	10	....
Walking sticks	3	6	10	....
Pencil	1	2	25	....
Torches, with dry battery	2	4	25	....
Spare dry battery	2	4	25	....

* Per Medical Officer on duty.

Item.	First Aid Post. Small Medium	Large.	Percentage of reserve.	Remarks.
(1)	(2)	(3)	(4)	(5)
Casualty Register	..	..	..	....
Tie-on-labels, set of 18 in an envelope ..sets.	..	..	..	....
* Tea box	1	1	..	....

Contents of tea box—

Tea	2 lb.
Condensed milk	2 ,,
Sugar	4 ,,
Cups and saucers	3 sets.
Sauce pan	1
Spoons	3
Kettle E.I.	1

NOTE.—(1) The scale of equipment is based on, approximately, treatment of 50 casualties at small and medium posts and 100 casualties at a large post.
(2) The scale does not include furnishings and fittings.
(3) Percentage of reserve is given for expandible articles only. This reserve should be available for immediate use, as stated in paragraph 4 of the letter.
(4) Certain non-expandible articles are treated as expandible for replacement due to breakage, e.g., syringes, needles, etc., or which having been used on casualties or not returned to the First Aid Post, e.g., splints, tourniquets, etc.

ADDITIONAL MEDICAL STORES AND EQUIPMENT FOR A FIRST AID POST IN WHICH FACILITIES ARE PROVIDED FOR DEALING WITH UNWOUNDED AND WOUNDED GAS CONTAMINATED PERSONS (BOTH SEXES).

Item.		First Aid Post. Small and medium.	Large.	Percentage of reserve.
Soda Bicarb	oz.	8	16	50
Sodium Chloride, or ordinary salt	lb.	2	4	50
Oleum Ricini	oz.	1	2	50
Paraffinum Liquidum	oz.	4	8	50
Bleaching Powder	lb.	56	112	50
Antigas ointment No. 1 or 2	2 oz. tins doz.	1	2	25
Soap, Yellow	lb.	7	14	50
Trays for bleach		2	4	..
Eye douche		1	2	..
Brushes, distemper		1	2	..
Towels, bath, Turkish	doz.	1	2	25
Receptacle for used towels		1	2	..
Bin for contaminated clothing		1	2	..
Bath 4′ × 2′ 6″ × 1′ deep		* 2	2	..
Showers fitted for hot and cold water ..		† 4	‡ 4	..
Clothing		..	..	..

* One for male, one for female.
† Two for male, two for female.

REVISED SCALE OF CONTENTS OF AN AMBULANCE SATCHEL.

[*Ref.*: Appendix E, paragraph 5 (*b*).]

Contents of an Ambulance Satchel—	
Bandages, triangular	6
Do. 2½ inches	6
Cotton wool 1 oz. packets	6
Dressing, First Field	12
Lint Cotton 1 oz. packets	6
Safety pins (large) cards of 6	3
Scissors	1 pair.
Tourniquet	1

REVISED SCALE OF CONTENTS OF A HAVERSACK AND POUCH FOR FIRST AID PARTIES.

[Vide Appendix F, Annexure (*a*).]

Contents of a Haversack—	
Bandages, triangular	36
Canes for tightening improvised tourniquets	8
Cotton wool, 1 oz. packets	6
Dressing, shell	18
Dressing, first field	12
Lint, unmedicated, in squares about 18″×12″	6
Ointment, antigas, 2 oz. tins or jars	8
Safety pins, large, cards of 6	8
Clasp knife	1
Scissors (7″ long, 1 blade pointed and 1 blade blunt)	1
Tourniquet	2
Splints, sectional wooden sets	2
Straps for sectional splints	18
Torch, electric	1
Pencil, lead	1

Contents of a Pouch—		
Bandages, triangular	9	
Canes for tightening improvised tourniquets	3	
Dressing, shell	6	
Dressing, First Field	6	
Labels, casualty identity, packets of 18	1	packet.
Ointment, anti-gas, 2 oz. tins or jars	1	
Safety pins, large, cards of 6	3	
Clasp knife	1	
Scissors (7" long, 1 blade pointed and 1 blade blunt)	1	
Tourniquet	1	
Per Party—		
* Splints Listen or splints, leg, sets	3	
Straps for splints, leg	21	

* To be carried separately.

REVISED SCALE OF CONTENTS OF A POUCH FOR A RESCUE PARTY.

[Vide Appendix G, paragraph 4, Annexure (*b*)—(*c*).]

Equipment for Rescue Party.

Contents of Pouch—		
Bandages, triangular	9	
Canes, for tightening improvised tourniquets	3	
Dressing, shell	6	
Dressing, First Field	6	
Labels, casualty identity, packets of 18	1	packet.
Ointment, anti-gas, 2 oz. tins or jars	1	
Safety pins (large), cards of 6	3	
Scissors	1	pair.
Tourniquet	1	

REVISED SCALE OF CONTENTS OF A FIRST AID BOX FOR A RESCUE PARTY.

[*Vide* Appendix G, Annexure (*c*).]

Equipment for a Rescue Party.

Contents of First Aid Box—		
Bandages, triangular	12	
Canes, for tightening improvised tourniquets	3	
Dressing, shell	6	
Dressing, First Field	6	
Lint unmedicated, in squares about 18 inches by 12 inches	6	
Ointment, antigas, 2 oz. tins or jars	2	
Safety pins (large), cards of 6	4	
Clasp knife	1	
Tourniquet	2	
Splints, leg, sets	2	
Straps for leg splints	14	

* To be carried separately from box.

TREATMENT OF BURN (OTHER THAN FROM POISON GAS) AND SCALDS.

First Aid Treatment.

I. *Instruction to lay personnel.*—If patient's clothes are on fire, do not allow him/her to run about, particularly out of doors. Smother flames by blanket or rug and rolling on ground. Lay the patient flat in warm place out of droughts preferably in bed.

Do not remove clothing or expose burned surface.

Do not apply oil, grease, flour, soot, etc.

Do not give the patient castor oil or any other medicine.

II. *First aid treatment of burns by first aid parties, wardens and rescue service personnel.*—(*a*) Dry unmedicated first aid dressings should be applied without delay and with the least possible handling of the burn and the surrounding skin. First Aid Party pouches contain dressing shell or First Field dressings, these should be used. Should this reserve become exhausted, unmedicated squares of lint (6 inches square) should be used.

In the absence of any of the above dressings the affected part should be covered with a clean soft cloth or cotton wool and bandaged.

Patients with severe burns, must be sent to the nearest hospital at once; those with minor burns should be sent to the nearest First Aid Post.

(*b*) Clothing should not be removed unless absolutely necessary. If garments must be taken off, great care should be used. If the material sticks, it is necessary to cut around the pieces of cloth which adhere to the flesh so as to have them in position when the garments are removed.

If blisters have formed they must not be broken or punctured, but should as far as possible be protected and kept intact.

III. *Treatment of burns at first aid posts.*—(*a*) Minor burns, which do not require admission to hospital, should, after cleansing the surface with soap and water, be dressed in the following way:—

(i) In the case of face or hands, with gauze or lint impregnated with sterilized vaseline.

(ii) In other parts of the body with Tannic acid jelly or Gentian Violet Jelly 1 per cent.

Do not apply any dressing over the burn area.

Do not allow the clothing to come in contact with the burn area until the congulum is formed and is dry.

Do not apply Tannic acid jelly or other coagulent jelly to the burn unless the burn has been adequately cleansed.

(*b*) *Serious burns requiring hospital admission.*—Cover the exposed portion of burn with sterile gauze or lint.

No attempts should be made to remove clothing in order to expose the entire burn area, provided the patient is shortly to be transferred to a nearby hospital.

Serious burns require injection of morphine (1/3 to ½ gr. for adults), noting dose and time on accompanying slip to hospital.

Combat shock by keeping patient warm, wrap patient in blanket, hot sweet drinks should be given in quantity.

Keep patient warm during transport to hospital.

IV. If the extent of burn is of less than 5 per cent and of first or second degree, the doctor can direct the patient for treatement at a First Aid Post or to Hospital.

Burns between 5—15 per cent should be admitted to hospital for few days.

Burns greater than 15 per cent skin surface should remain in hospital till healing well advanced.

Sulphonamide, by mouth, should be given from the beginning to prevent sepsis.

V. *Treatment of phosphorus burns.*—Patients may be brought to the First Aid Post or the Hospital suffering from burns caused by incendiary bombs. The bomb fragments contain a certain amount of phosphorous which will continue to burn the skin unless its action is quickly counteracted. To prevent this burning continuing, the following methods are suggested:—

Cover the burn area with a gauze or lint soaked in

(*a*) Two per cent solution of copper sulphate. (The action of the copper sulphate is to coat particles of phosphorous with an inert compound by chemical action and prevent their continuing to burn and enable their removal to be carried out subsequently).

(*b*) 5 per cent solution of soda bi-carbonate.

(*c*) In the absence of above solutions, the first aid treatment should consist in the immersion of the affected part in water or the application of a thick pad soaked in water.

The particles imbedded in the skin can be removed, under water by means of forceps or a gauze sponge, care being taken that none of the fragments are overlooked. The remaining burn should be treated as thermel burns. Avoid oils or greasy dressing unless absolutely certain that all the fragments have been removed.

RESERVE MEDICAL EQUIPMENT FOR CASUALTY SERVICES (EXCEPT FIRST AID POST), E.G., CONTENTS OF HAVERSACKS, POUCHES, FIRST AID BOXES, AMBULANCE SATCHELS.

Item.	Percentage reserve.
Bandages, triangular	25
Bandages, loose wove, 2½ inches	25
Dressing shell	50
Dressing, First Field	75
Lint, unmedicated, in squares 18″ × 12″	50
Cotton wool, 1 oz. packets	50
Ointment, anti-gas, 2 oz. tins	15
Soissors (7 inches long, 1 blade pointed, 1 blade blunt)	..
Clasp knife	..
Tourniquet	10
Canes for tightening improvised tourniquets	10
Splints, wooden sets	15
Straps for splints	25
Safety pins, large, cards of 6	50
Torch	..
Pencil	15
Labels, casualty identity, packets of 18	..

The question of replenishment of equipment after a raid should be considered.

8. *Personal equipment of the staff.*—

Steel helmet—One per doctor at post.

Civilian duty respirator—One per doctor at post and one per member of staff.

White overalls—One suit per person engaged in first aid duties.

Where cleansing section for the post is provided—

	Large.	Medium.	Small.
Light oilskin suit	6	4	2
Oilskin gloves, pairs	6	4	2
Gumboots, pairs	6	4	2

ANNEXURE (*a*).

First Aid Posts.

Arrangement of First Aid Posts.—The guidance given in this memorandum as to the spacing of posts, and the size of post required (large, medium, or small) should be closely followed in the preparation of schemes. The number of posts should not be greater than is required by the area to be covered, and the size of individual posts should be adjusted in accordance with the population formula given in the memorandum. Substantial departures from these principles will only be accepted if special reasons were shown.

1. *General considerations.*—A First Aid Post should be designed to receive persons suffering from comparatively minor injuries and unwounded persons whose clothing or skin was contaminated and who would need to be washed and get a change of clothing.

It is intended that First Aid Posts should deal with light, as distinct from serious, cases of injury or gas contamination, i.e., cases requiring treatment which can properly be given initially by personnel trained in first aid. Serious cases, i.e., cases calling for urgent medical or surgical attention, such as may be obtained only at a properly equipped hospital, would derive no benefit from further first aid treatment after having received attention from the first aid party, and might indeed suffer by delay. Such cases should accordingly be sent direct to hospital and should not pass through a First Aid Post at all.

Broadly, the distinction between light and serious cases is whether the casualty is fit and able to walk; although it does not necessarily follow that all cases unable to walk will be serious cases. Thus, simple fractures, sprains, flesh wounds, or burns, whether contaminated or not, should be treated as light cases (even though they are not walking cases) and should be dealt with at First Aid Posts. To treat such cases as serious cases merely because they were unable to walk would risk causing congestion at the hospitals. On the other hand, cases of serious injury, whether or not accompanied by gas contamination, and cases of definite lung irritant gas poisoning (where any exertion is undesirable) should be taken direct to hospital. It is not intended that such cases should receive interim treatment at First Aid Posts.

It is important that these principles should be understood.

Those arriving at First Aid Posts would all require urgent treatment of some sort. Each post must therefore be capable of dealing with minor casualties of all types and of handling considerable numbers after a raid. It would be unsound in principle to rely on being able to divert or transfer casualties to a neighbouring post which was less fully occupied, because of the dangers of delay; but it has to be recognized that in practice this might have to be done in an emergency.

A First Aid Post has to be capable of dealing with casualties arising both from raids in which gas was used and from raids in which no gas was used. The method of working within the post would be different in the two alternatives, but the building must be adapted to meet either case.

Broadly it may be assumed that the number of wounded (i.e., those requiring first aid treatment proper) would depend on the total weight of bombs dropped, irrespective of whether gas was used. The post must therefore have a certain first aid capacity to meet either alternative, the difference between the two sets of circumstances being that if gas were used some of the wounded would first require cleansing treatment.

The substantial factor introduced by the use of a blister gas would be the addition of a number of persons whose skin or clothing was contaminated, though they were not wounded. The result is that the post must contain separate and additional space for dealing with these persons.

The requirements of a post can therefore be considered in two parts—

(i) a First Aid Section, to deal with all wounded persons and persons requiring remedial treatment as a result of being gassed, some of these wounded or gassed persons being possibly also contaminated with blister gas;

(ii) a Cleansing Section, to deal with unwounded persons whose skin or clothing was contaminated with blister gas.

Both these sections will need to be duplicated to provide for casualties of both sexes.

It will be convenient to describe the essential requirements of these two sections separately.

2. *First Aid Section of a post.*—To meet the simplest case, that is to say when no gas has been used, the First Aid section for each sex need consist of three rooms only, namely:—

FA. 1 Reception Room

FA. 2 First Aid Room.

FA. 3 Waiting Room.

The Reception Room, into which casualties would first be admitted, would be a place where their outer clothing could be removed as necessary. They would then pass straight into the First Aid Room, but the Reception Room should be large enough to permit of a certain number remaining there if the First Aid Room was full.

The First Aid Room, leading as directly as possible off the Reception Room, would be the most important room in the section, and should be allotted as much space as possible, to prevent casualties being delayed in the Reception Room.

The Waiting Room would be required for the casualties after they had passed through the First Aid Room. Some would be waiting removal to hospital, others would have to be dressed preparatory to discharge. In both cases a wait of some length might be involved (for instance those to be discharged might need a period of rest), so that considerable waiting accommodation would be desirable. This need not, however, all be in the same building as the post itself. Provided that some waiting accommodation were available in the post, the remainder could be in some other building near at hand.

If a blister gas were used, some of the wounded persons might be expected to be contaminated, and this would entail some change in the working of the First Aid Section. Complete segregation of these casualties at the outset would be desirable in principle, and should be arranged in Posts where space was available. The best course would be to have two Reception Rooms (FA. 1a and FA. 1b), one for uncontaminated and one for contaminated casualties. (Both rooms would be available for uncontaminated casualties if gas were not used.) This division of FA. 1 into two separate rooms, may, however, be difficult in some buildings which are otherwise suitable, through lack of space. In that event working arrangements should be made to pass the contaminated persons received to the cleansing stage as quickly as possible, and to prevent their transferring contamination to others. It must be remembered that contamination is a matter of degree, and in practice the number of wounded persons who will have sustained a dangerous degree of contamination (i.e., who have been splashed with liquid blister gas) is likely to be few, and they will be readily detected. The casualties who have only been slightly exposed to blister gas vapour can safely be left to be treated with uncontaminated persons.

For the grosaly contaminated casualties, the first essential is to discard the contaminated outer clothing as soon as contamination is appreciated. If they arrive at the post still wearing contaminated outer clothing and this clothing can be discarded in an open shed before they enter the posts, the risk of their introducing contamination into the Reception Room proper is very greatly reduced.

Where it is impracticable to provide an open shed outside the building, a room near the entrance can be used instead. The windows of such a room should be kept open, to prevent a concentration of gas being built up within it from the contaminated clothing, and the room should be treated as external to the building by being provided with no gas protection and being separated from the rest of the building by an air lock.

Where even a separate room such as this cannot be provided, contaminated casualties must be dealt with in the general Reception Room, under the best precautions possible. Contaminated clothing must be removed out of the room as quickly as possible.

After being undressed, these contaminated casualties could be washed and receive first aid in the general First Aid Room.

The essential requirements of the First Aid Section of a post for each sex may be shown diagrammatically in Figures 1 and 2.

3. *Cleansing Section of a post.*—The Cleansing Section for each sex should also consist of three rooms in series:—

C. 1. Undressing Room.

C. 2. Washing Room.

C. 3. Dressing Room.

There should again be an external shed in which outer clothing should be left. In any case where this is not possible more space should be allowed in the undressing room, so as to reduce the risk from persons jostling one another before the outer clothing has been removed.

The arrangement of the Cleansing Section for each sex can be shown diagrammatically in Figure 3.

4. *Size for a First Aid Post.*—The capacity of the post should obviously be related to the factors which would affect the possible number of casualties to be handled. No estimate of any kind can be given on this point, but areas with a high density of population which are likely, from their geographical situation, to be within range of frequent attacks need more provision than areas of lower density. The precise factors cannot be expressed numerically but the recommendations below are the result of careful consideration and should be followed.

The normal rule is that adjacent posts should be less than two miles apart, so that no casualty should have to go more than a mile to reach a post. Each area where posts are required should be

planned out on a map to show the proposed position of each post, and the area which it would serve—an area of roughly a mile radius, or up to three square miles in extent. The size of the post should then be reckoned according to the following formula:—

Population in area of post.	Size of post required.
30,000—60,000	Large.
20,000—30,000	Medium.
3,000—20,000	Small.

If it is found in the densely populated centres of towns that the planned area of a post contains more than 60,000 people, the area should be replanned so as to bring it within this limit and if necessary an additional post should be arranged.

For areas containing less than 3,000 population within about three square miles a formal First Aid Post should not normally be required.

This grading of posts as large, medium and small is suggested for general guidance only. The actual sizes of individual posts will be governed primarily by the buildings available, and where the buildings provide space which is less than the standard thought necessary, efforts should be directed towards increasing the effective capacity of the post either by arranging for temporary structures to afford extra accommodation for some purposes, or by endeavouring to hasten the rate of flow through the post if a large number of persons reach it simultaneously. The capacity of the post is really governed by the rate of flow through the different sections, and this can be improved by planning the available accommodation in the most convenient manner possible, by efficient equipment, and so on.

A building which suited in dimensions a larger size of post than the population in its area justified could, if no greater expense was thereby incurred, be laid out to the larger size, but could be staffed and run as a smaller post, i.e., as a medium or small post, according to the population in its area.

In addition to the accommodation for patients, every post must have an office and store rooms for administrative purposes, and facilities for the staff to be fed and to rest. The office must be in the post itself, but the store rooms and staff accommodation can if necessary be in a neighbouring building.

It is also possible, though not to be recommended, for the post itself to be divided in two separate buildings. The division can take the form either of a separate building for each sex, or of one building for the two First Aid Sections and another for the two Cleansing Sections. It is, however, essential that if two buildings are used they should be very close together, within sight of one another, since members of the public in need of treatment will not distinguish in advance which section they will need, and they must not be allowed to come to one building only to find that they are sent some distance to another.

The recommended sizes of the different rooms in the three grades of post are given in the following table. The figures must be understood to be approximate, for purposes of general guidance.

For each sex.	Large post.		Medium post.		Small post.	
	Area of room.	Number of patients at one time.	Area of room.	Number of patients at one time.	Area of room.	Number of patients at one time.
	SQ. FT.		SQ. FT.		SQ. FT.	
First Aid Section—						
A. 1 Reception—						
FA. 1 (a) general	180	10	130	6	120	4
FA. 1 (b) for contaminated ..	145	5	120	4	100	2
	325	15	250	10	220	6
FA. 2 First Aid	650	24	450	16	350	12
FA. 3 Waiting (if supplementary accommodation is provided elsewhere—see below).	225	10	175	8	130	6
Total ..	1,200	..	875	..	700	..
Cleansing section—						
C. 1 Undressing	325	30	225	20	145	12
C. 2 Washing	225	15	170	10	120	6
C. 3 Dressing	400	30	260	20	170	12
Clothing Store	100	..	70	..	40	..
	1,050	..	725	..	475	..
Total, both sections for two sexes.	4,500	..	3,200	..	2,350	..
Administrative office	150	..	100	..	100	..
Total in Post proper ..	4,650		3,300		2,450	..
Additional accommodation (possibly in another building)—						
Additional waiting accommodation.	550	36	400	25	250	16
Additional Store rooms ..	150	..	100	..	100	..
Total space required (excluding staff rooms).	5,350	..	3,800	..	2,800	..

The above calculations have been based on the following space allowances for different purposes:—

Lying cases—

For reception of uncontaminated cases, and for cases in waiting rooms after treatment, 27 square feet per patient.

For undressing and washing, if contaminated, 40 square feet per patient.

For first aid treatment, 40 square feet per patient.

Sitting cases—

For reception of uncontaminated cases, and for cases in waiting rooms after treatment, 7½ square feet per patient.

For undressing of contaminated wounded after prior removal of outer clothing, 10 square feet per person.

For first aid treatment, 15 square feet per patient.

For dressing after washing (unwounded cases), 12 square feet per patient.

Allowance has also been made for furniture and equipment in the rooms.

The amounts of space listed in the above table are designed to permit of the following rates of flow in the posts, expressed as the number of patients of each sex arriving within half an hour. It is assumed that this period would represent the peak inflow following one raid.

The number of lying cases may seem large if all serious cases requiring hospital treatment are to go straight to hospital; but this is to provide a margin of safety, since lying cases occupy so much more space than sitting cases.

Inflow in half an hour (for each sex).	Large post		Medium post.		Small post.	
	Lying.	Sitting.	Lying	Sitting.	Lying.	Sitting.
First-Aid Section ..	20	28	14	18	10	14
Cleansing Section ..	..	90	..	60	..	36

Diagrammatic lay-outs of a Large and Small First Aid Post are given in Figures 4 and 5.

In all schemes for posts in existing buildings the greatest possible simplicity of planning, and avoidance of structural work, are to be aimed at in order to reduce the time which would be necessary on a threat of war to get the post in a condition for use.

5. *Description of particular rooms in post—Open sheds.*—These should preferably not cover the actual entrance to the building to avoid entry of vapour from the discarded clothing roof is desirable as weather protection merely. The sides should be as open as possible to ensure free ventilation.

FA. 1. Reception Rooms for wounded.—An ordinary room, or a partitioned portion of a large hall, etc., will suffice for the general Reception Room (FA. 1a). The contaminated Reception Room (FA. 1b), where provided for the seriously contaminated casualties, should be such that it can be frequently washed down to remove contamination.

In both cases forms or chairs (which will need to be covered with American cloth before use) should be provided for sitting cases, and a w.c. or latrine buckets should be available for patients. Separate provision should be made for the contaminated casualties. Bins with close-fitting lids (e.g., galvanized iron sanitary bins) will be required for contaminated clothing.

FA. 2. First Aid Room.—In this room space and light are the main considerations, and access to running water for use by the first aid personnel. Two or three sinks with warm water will be needed for washing the seriously contaminated casualties, and they are washed in a portion of this room. It may well be possible to complete the dressing of wounds of these casualties in this space, and the space would be available for general first aid work in the event of no gas cases being brought in.

FA. 3. Waiting Room.—The Waiting Room requires no special equipment or facilities, except that a w.c. or latrine buckets should be available.

There should be a record clerk (probably two clerks) at a table in the Waiting Room to take particulars of all patients who pass through the FA. Section of the post.

If a small waiting room in the post itself is supplemented by additional waiting accommodation in another building, the latter should be regarded as an overflow only, and should not be used while the accommodation in the post is sufficient.

C. 1. Undressing Room for contaminated unwounded.—Forms covered with American cloth should be provided for undressing, and bins with close-fitting lids (e.g., galvanized iron sanitary bins) will be required for contaminated clothing. One or two latrine buckets should be provided behind screens; it is inadvisable that contaminated persons should use w.cs. unless their use by other persons can be absolutely prevented.

The construction of this room should, if possible, be such that it can readily be washed down (walls as well as floor) to remove contamination. This washing down should be done as a matter of routine after every day in which the room is used.

C. 2. Washing Room for contaminated unwounded.—Bleach and eye treatment may first have to be given, followed by washing. For the latter purpose warm water must be provided, and it is suggested that the simplest procedure will be for each person to go under a shower to get wet, withdraw and soap himself, and then pass under another shower before drying. This scheme can most

economically be met by two sets of showers with the washing space between. For a large post six showers are a minimum, and for a medium post four. For a small post two showers might suffice, but three or four would be better. The water can, if necessary, be led to the showers in rubber piping.

Drainage under the showers may have to be improvised. If the floor is of wood, it can be covered with zinc, lead or linoleum, which should be turned up the walls, at the skirtings, for about a foot. If the floor is of concrete it should be treated with sodium silicate solution (one part of water glass to four parts of water). If there is no fall for drainage the water can be swept to an improvised drain, either in the floor or in the wall. Alternatively a low sloping platform can be built under the showers, with a drain underneath, and the surface covered with linoleum, or preferably with zinc or lead sheeting.

C. 3. Dressing Room for unwounded.—In the Dressing Room there should be a record clerk at a table to take particulars of all persons passing through the C Section of the post and to take charge of the issue of clean clothing. A clothing store would be required in association with this room.

Administrative Office.—It is essential that an office should be provided for the officer in charge of the post. The office must be in the post itself, and should be provided with a telephone.

The administrative work, besides the arrangement of the rota of duties for staffing the post, would include compiling the records of persons passed through the post for transmission to the local authority, and records of the stores supplied and consumed, clothing received and issued; and so on.

Staff accommodation.—It will be necessary that the post itself should include lavatory accommodation for the staff, and at least a small rest room for female members of the staff. In addition, arrangements must be made for feeding the staff and, possibly, where the post might have to be continuously manned, for billeting either the whole staff or at any rate one shift. This latter accommodation can, if necessary, be in a separate building, provided that it is not too far away. The same detached building could, for instance, contain the staff accommodation and the extra waiting room for patients who have passed through the FA section.

6. *Segregation of contaminated casualties and choice of floors.*—It has been said that where necessary contaminated casualties can be treated in the same accommodation as uncontaminated. It remains true that there is every advantage in securing as great a measure of separation as possible between the two types, and, where the available premises allow, this separation should be maintained by providing the additional reception room, and even a separate washing room, for contaminated wounded patients. A separate First Aid room is *not*, however, to be recommended.

Equally it is advisable, if it can be managed, that contaminated patients should be received through a separate entrance from the uncontaminated. This again is a matter which must depend upon the particular building, and separate entrances need not be regarded as essential. It would in fact be possible to plan a post with a common entrance for both sexes, whether contaminated or uncontaminated, and similarly a common exit. The important point to bear in mind is that where several entrances or exits are available in the building the planning of the post should, so far as possible, be arranged to make use of them, with the object of keeping the contaminated apart from the uncontaminated until after they have received cleansing treatment.

Another point is the possibility of using more than one floor. In general a post which is entirely on the ground floor is likely to be simplest. Basements may be suitable in some cases, but often the access to them is difficult both from the point of view of handling stretchers and for the separation of different types of casualties. Stairs are a difficulty for stretcher cases, and an upper floor might, therefore, be awkward to operate. It also has to be remembered that contaminated persons will, to some extent, contaminate all corridors, staircases, etc., through which they pass before being cleansed, and that the accommodation for their undressing and washing should therefore be as near as is possible to the door by which they enter the building. This may be a reason against locating Section C on an upper floor, even though no stretchers would need to be carried to this section. A basement would be suitable for Section C if its access were convenient and provided that proper drainage could be installed.

7. *Further points in the planning of posts.*—The following general points should be borne in mind in the planning of posts:—

(i) All lights must be obscured after dark, so that none are visible from outside except a dim sign indicating the position of the post.

(ii) To prevent damage from broken glass, roof lights (unless they are of "armoured" glass) should either be boarded underneath or, if light is essential, fine mesh wire netting should be fastened close under the glass.

(iii) All rooms should be warmed in winter if necessary.

(iv) Alternative illumination should be provided in case of failure of lighting supply. Similarly the hot water supply should if possible not be solely dependent upon gas or electricity.

(v) The tanks for storage of water should be ample in size, in case the mains supply is interrupted by bomb damage.

(vi) A shelter for the staff should be provided to protect them against blast, splinters and falling debris.

APPENDIX E.

Ambulance Service.

1. *Control.*—The Officer-in-charge, the Casualty Organization, is in general charge of the Ambulance Service in peace and war. Where more than twenty-five ambulances and cars for sitting cases combined are authorized on the establishment, he should have, to assist him, a Staff Officer or Ambulance Officer who should be responsible under his direction for the organization and administration of the service, the enrolment and training of the personnel, and the maintenance of records. He should be provided with the necessary clerical staff. This officer would be in command of the Ambulance Service after receipt of the Preliminary Warning—*See* also Appendix D, paragraph 1, second sub-paragraph.

2. *Numbers of vehicles.*—Ambulances and cars for sitting cases should be provided in accordance with the authorized establishment.

3. *Vehicles type.*—Suitable light vans capable of taking in two tiers 4 stretchers of the size of the Army Pattern (viz., 7 feet 9 inches long, 1 foot 11 inches wide and 6 inches high) should be earmarked. It may be found necessary to earmark private cars of 20 horse-power and over for conversion by the removal of part of the body and the substitution of a van-shaped body. There should be room within the ambulance for the attendant. Suitable methods of conversion of different types of cars are under consideration by the Government of India.

4. *Personnel.*—The establishment is one driver and one attendant for each ambulance; one driver for each car for sitting cases. A reserve of 100 per cent should be enrolled and trained.

5. *Equipment.*—The scale of equipment is—

(*a*) *Personal Protective Equipment*—

One steel helmet—per driver and attendant.

One eye shield—per driver and attendant.

(*b*) *Ambulance equipment—per ambulance*—

4 Stretchers.

8 Blankets.

1 Ambulance satchel containing—

Bandages, triangular	6
Bandages, 2 inches	6
Cotton wool 1 oz. packets	6
Dressings, First Aid Medium	12
Lint cotton, 1 oz. packets	6
Safety pins (large)—cards of 6	3
Scissors	1 pair
Tourniquet (St. John type)	1

6. *Ambulance stations.*—Ambulances and cars for sitting cases should be located at Combined A.R.P. Depots.

APPENDIX F.

First Aid Parties.

1. *Controlling Officers.*—The head of the Casualty Organization is in general charge of the First Aid Party Service in peace and war. Where more than ten First Aid Parties are authorized on the establishment he should have, to assist him, a Staff Officer who should be responsible under his direction for the organization and administration of the service, the enrolment and training of personnel and the maintenance of records. He should be provided with the necessary clerical staff. He would be in command of the First Aid Party Service after receipt of the preliminary warning. An officer of the St. John Ambulance Association might be suitable for the appointment—*See* also Appendix D, paragraph 1, second sub-paragraph.

Where there are more than six First Aid Parties on the establishment, a First Aid Party Group Leader should be appointed to be in command of each group of six parties or less. These group leaders are extra to the authorized establishment.

In each Party one man should be appointed as Leader of the Party and one to act as his Deputy.

2. *Composition of parties.*—First Aid Parties should be composed of 4 men and 1 driver. The party should be provided with a car (other than an ambulance or a car for sitting cases).

Number of parties.—First Aid Parties should be provided in accordance with authorized establishment. A reserve of 100 per cent should be enrolled and trained.

Equipment.—The equipment laid down for a First Aid Party is in Annexure (*a*) to the Appendix.

Depots.—First Aid Parties should be stationed in combined depots where other Air Raid Precautions services (Rescue, Ambulance, etc.) are also stationed.

ANNEXURE (*a*) TO APPENDIX F.

Equipment for First Aid Parties.

(i) Personal equipment—

Steel helmet—one per member of party (including driver).
Eye shield—one per member of party (including driver).
Respirator—one per member of party (including driver).

(ii) Equipment for First Aid Party—

2 stretchers.
2 blankets.
2 ground sheets (only to be provided for stretchers which are not of the " all-metal " type).
4 water bottles with carriers.
3 splints Liston or Splints, leg sets.
21 straps for splints, leg.

Item.	No.
1 Haversack containing the following:—	
Bandages, triangular	36
Canes for tightening improvised tourniquets	8
Cotton wool, 1 oz. packets	6
Dressing shell	18
Dressing shell, First Field	12
Lint, unmedicated, in squares about 18 inches by 12 inches	6
Ointment, anti-gas, 2 oz. tins or jars	8
Safety pins, large, cards of 6	8
Tannic acid jelly (tubes) or substitute	4 (½ oz
Clasp knife	1
Scissors (7 inches long, 1 blade pointed and 1 blade blunt)	1
Tourniquet (St. John type)	2
Tourniquet (Samway)	2
Splints, sectional wooden sets	2
Straps for sectional splints	18
Torch, electric	1
Pencil, lead	1
4 pouches each containing the following:—	
Bandages, triangular	9
Canes for tightening improvised tourniquets	3
Dressing shell	6
Dressing shell, First Field	6
Labels, casualty identity packets of 20	1 packet
Ointment, anti-gas, 2 oz. tins or jars	1
Safety pins, large, cards of 6	3
Tannic acid jelly (tubes) or substitute	2 (½ oz.)
Clasp knife	1
Scissors (7 inches long, 1 blade pointed and one blade blunt)	1
Tourniquet (St. John type)	1
Tourniquet (Samway)	1

APPENDIX G.

Rescue service.

1. *Control.*—A responsible technical officer should be placed in charge of the Rescue Service.

Where more than 15 parties are authorized and the officer in charge does not devote the whole of his time to the service he should be provided with one or more Staff Officers with constructional qualifications who should be responsible under his direction for the organization and administration of the service, the enrolment and training of the personnel and the maintenance of records. The necessary clerical staff should also be provided.

The Staff Officer or Officers would after receipt of the preliminary warning be available to assist in the technical direction of the work at incidents.

When there are more than six rescue parties on the establishment a rescue Group Leader with constructional qualifications should be appointed to be in command of each group of six parties or less. The Group Leaders are extra to the authorized establishment.

In each party one man should be appointed as Leader of the party and to act as his Deputy.

2. *Composition of parties*—

(*a*) *Light Rescue Parties.*—These consist of eleven men, viz.:—

One Leader.
Three skilled men.
Six unskilled men.
One driver for the party lorry.

(*b*) *Heavy Rescue Parties*—These consist of nine men, viz.:—
One Leader.
Three skilled men.
Four unskilled men.
One driver for the party lorry.

It is desirable that where necessary in each type of rescue party men should be available who are capable of turning off the gas, water and electricity services.

3. *Number of parties.*—Rescue parties should be provided in accordance with the authorized establishment. The proportion of Light to Heavy Rescue Parties must be decided in accordance with local conditions. A reserve of 100 per cent should be enrolled and trained.

4. *Equipment.*—*See* Annexures (*a*), (*b*) and (*c*) of this Appendix.

5. *Vehicles.*—Lorries having sufficient capacity to carry both personnel and party equipment should be provided for all rescue parties of the authorized establishment.

In the case, particularly of light rescue parties, light trailers which can be detached and dragged over debris should be provided.

6. *Depots.*—Rescue parties should be located in Combined Air Raid Precautions Depots where all other Air Raid Precautions Services are also accommodated.

ANNEXURE (*a*).

(*a*) *Party equipment*—

(i) *Per Light Rescue Party.*—The equipment for a light party is laid down in A.R.P. Handbook —(India) No. 1. In addition the following should be provided:—

Set of rope tackle, 3 sheave—2 sheave	1
Jacks with 10 or 15-ton lift	2
15 feet lengths of wire rope	6
Rubber gloves (pair)	1
200-feet length Manilla rope, 3 inches or 4 inches (where needed)	1
Stretcher harness (set)	1
Webbing bands (for carrying casualties) (set)	1
Scaffold poles for sheerlegs	3
Debris baskets	6
Leather gloves (pair) (per member of party)	1
Firemen's axes (with carrying pouches)	6
Electric inspection lamp, with up to 200 feet of flex	1
Short Ladder (8 or 10 feet)	1
Stirrup hand pump	1
Buckets for use with pump	3
Tarpaulins or stout canvas sheet or sheets of corrugated iron (to protect trapped persons from falling debris until released)	As required
Water-bottles with carriers	2
First Aid Pouches [for contents—*see* Annexure (*b*)]	2
First Aid Box [for contents—*see* Annexure (*c*)]	1

(ii) *Per Heavy Rescue Party.*—Equipment as for a Light Rescue Party and in addition—

3-ton lifting tackle	1
6-feet chains (3-ton lift)	2
20-ton lifting jack	1
Large acetylene flare	1
Portable acetylene cutting outfit (where needed) with asbestos blanket	1

(*b*) *Personal equipment per member of party*—

Steel helmet	1
Civilian Duty-Respirator	1
Eye Shield	1

ANNEXURE (*b*).

Contents of Pouch for a Rescue Party (2 per party).

Items.	Number.
Consumable items—	
Bandages, triangular	9
Canes for tightening improvised tourniquets	3
Dressings, first aid, large	6
Dressings, first aid, medium	6
Labels, casualty identity, packets of 20	1 packet
Ointment, anti-gas, 2 oz. tins or jars	1
Safety pins (large), cards of 6	3
Tannic acid jelly, ½ oz. tubes	2
Non-consumable items—	
Scissors	1 pair
Tourniquet (St. John type)	1
Tourniquet (Samway)	1

ANNEXURE (c).

Contents of First Aid Box for Rescue Party (1 per party).

Items.	Number.
Consumable items—	
Bandages, triangular	12
Canes for tightening improvised tourniquets	3
Dressings, first aid, large	6
Dressings, first aid, medium	6
Lint, unmedicated, in squares about 18 inches by 12 inches	6
Ointment, anti-gas, 2 oz. tins or jars	2
Safety pins (large), cards of 6	4
Tannic acid Jelly, ½ oz. tubes	2
Non-consumable items—	
Clasp knife	1
Tourniquet (Sanfway)	2
* Splints, leg, sets	2
* Straps for leg splints	14

* To be carried separately from box.

APPENDIX H.

Air Raid Precautions Depots.

1. *General considerations.*—Air Raid Precautions depots were intended to be provided for each separate Air Raid Precautions Service, but consideration of schemes in detail proves that this will result in a multiplication of small depots at each of which the same facilities will have to be provided. This is obviously uneconomical. There are also other important difficulties—

(*a*) Administration of many small depots will be difficult.

(*b*) Many more telephone lines will have to be maintained in raiding conditions.

(*c*) Control is difficult; because, services are unduly dispersed.

(*d*) The fact that each service has its separate Air Raid Precautions depots will result in several messages instead of one being sent from the Control Centre when parties of different services are required. This will entail serious delay.

2. In view of the above considerations the principle of Combined Air Raid Precautions depots has been established, and depots will be set up at which will be located—

First Aid Parties.
Ambulances.
Rescue Parties.
Decontamination Parties.

3. *Control.*—The Air Raid Precautions Controller will be responsible for—

(*a*) The decision as to the number of Air Raid Precautions depots necessary and their location.
(*b*) The planning of the layout of each depot.
(*c*) Allotment of accommodation.
(*d*) Structural alterations and protection.
(*e*) Issue of orders for the management of the Air Raid Precautions depot to the Depot Superintendent (*see* below).
(*f*) Periodical inspection of Air Raid Precautions depots.

4. *Depot Superintendent.*—A Depot Superintendent, who may require one Deputy when Air Raid Precautions Services are standing to permanently, should be appointed for each depot. He should not be a member of any particular Air Raid Precautions Service and should be directly responsible to the Air Raid Precautions Controller.

5. His duties are generally of an administrative nature though he has certain operational functions. His duties will include—

(*a*) Despatch of Air Raid Precautions Services to incidents in accordance with orders from the Report Centre. In every exceptional circumstances he may despatch services on his own responsibility, but he should always report such action to the Report Centre.

(*b*) Transmission of Air Raid Warnings to Air Raid Precautions Services located in the depot and supervision of action ordered to be taken on their receipt.

(*c*) Constant practice of action to be taken—

(i) On receipt of Air Raid Warnings.

(ii) In case of fire in the depot.

(*d*) General administration of the depot in accordance with his instructions.

(*e*) Storage of equipment.

(*f*) Ensuring adherence to the Depot Routine.

(*g*) Maintenance of discipline and morale.

(*h*) Welfare of personnel in the depot.

(*i*) Provision of Depot Guard which is formed from the personnel located at the depot.

6. *Air Raid Precautions depot staff*—

Depot Superintendent	1 plus 1 Deputy.
Telephonist	1 plus 2 Reliefs.
Clerk	1
Storeman	1
Messing staff	Numbers depending on size of depot.
Sweeper	1 or 2 in large depots.

7. *Sitting of Air Raid Precautions depots.*—As a very general guide, in order to prevent delay in sending services to an incident, Air Raid Precautions depots should be so spaced that services can get to an incident within 10 minutes after receipt of the message ordering them out.

The whole area should be examined from the point of view of road communications. It may then be found that there are certain parts into which access is difficult and in which it may be necessary to establish a depot. A decision should then be made as to the rough areas each depot would normally serve. The number of Air Raid Precautions Services required to serve any particular area should bear approximately the same relation to the total services as does the population of that area to the population of the whole area. This will give a guide as to the size of depots required.

In a small area where the number of Air Raid Precautions Services is small only one Air Raid Precautions depot may be necessary, but in a large area several depots may be needed.

It is suggested that not more than 200—250 Air Raid Precautions personnel should be located at one depot. A balance between too great a dispersion of services and too great a concentration must be maintained.

Depots should be easy of access to Air Raid Precautions vehicles and should have good turn round space.

Vehicles should be protected against weather.

Accommodation in an Air Raid Precautions depot.—The following accommodation is necessary in a depot where the services are required to stand by throughout the 24 hours:—

(*a*) *Administrative office* with telephone.

(*b*) *Operational office with telephone.*—This must be protected against blast, splinters and be capable of being rendered gas proof and rendered secure against the fall of debris. It might well be in the shelter.

(*c*) *Rest and recreational room.*—Sufficient space for all personnel based on the depot. This room is also used for instructional purposes.

(*d*) *Sleeping accommodation.*—Sufficient space for all personnel based on the depot.

(*e*) *Shelter.*—Sufficient space for all personnel based on the depot.

Standard of protection.—Secure against blast, splinters and fall of debris and capable of being made gas proof.

(*f*) *Mess room.*—Sufficient space for 50 per cent of relief on duty if meals taken in two relays.

(*g*) *Cookhouse.*

(*h*) *Lavatories.*

(*i*) *Accommodation for washing and dressing.*—This should provide—

(i) Undressing room.
(ii) Washing room.
(iii) Drying space.
(iv) Dressing room.
(v) Heating arrangements where necessary.

(*j*) *Store* for equipment not kept normally on lorries.

(*k*) Adequate lighting, ventilation, heating and cooling is needed.

(*l*) There should be a suitable yard in which vehicles of the parties can be parked.

NOTE.—In towns where there are no paid personnel authorized on the establishment Items (*a*), (*c*), (*d*), (*f*) and (*g*) should not be provided.

ENCLOSURES.

(1)

Letter from the Government of India, Civil Defence Department, New Delhi, dated 11th November 1941, No. 78/309/41-A.R.P. (Medl.).

[Mobile First Aid Posts.]

I am directed to address the Provincial Government on the above subject which has been under the consideration of the Government of India.

2. It is suggested that in the less densely developed and populated areas fixed aid posts might be replaced by mobile first aid posts which could be used, in effect, to set up an aid post as and where required. Experience in England has shown that mobile first aid posts can very largely be used instead of fixed aid posts in the suburban areas and that even in thickly populated areas they are likely to prove a useful replacement or reinforcement of the fixed aid posts which may be destroyed or over run by large number of casualties.

3. The Provincial Government might consider these proposals in the light of local conditions particularly in big cities, and inform the Government of India of their views. If they accept the necessity for such posts their requirements together with a rough estimate of their financial effect may also be furnished.

It may be pointed out that these mobile first aid posts will not be in addition to those fixed aid posts which have already been sited and sanctioned but the mobile posts should replace some of the fixed first aid posts according to the local conditions in a way that the total expenditure involved in both kinds of posts will not vary to any considerable extent from that anticipated on the fixed ones already sanctioned.

4. In some cases it may be found that a mobile first aid post can replace as many as two to three static posts.

5. The scale of equipment for and a description of a mobile first aid post are sent herewith; this scale is more or less the same as that for a small fixed first aid post laid down in Government of India, Home Department letter No. 78/296/41-A.R.P., dated the 18th September 1941.

6 *Financial.*—Expenditure in this connexion should not be incurred until sanctioned in principle by the Government of India.

7. It is requested that the matter may be treated as urgent.

SUB-ENCLOSURES.

MOBILE FIRST AID POSTS.

The mobile first aid post is to consist of a motor vehicle, such as a big truck or Ford van, carrying the equipment of a fixed first aid post and also the medical staff. The auxiliary staff attached to a mobile first aid post should travel separately to the scene of the incident whenever practicable.

The intention in using mobile first aid post is partly to enable a complete first aid medical unit to proceed to the scene of major air raid damage, there to set up, either in the shelter of any convenient building or even, if the weather is fine, in the open air and provide immediate medical attention and treatment, and partly to reinforce the fixed aid posts. It is not proposed that first aid should be carried out inside these vehicles.

It is proposed that the first aid equipment to be carried in the vehicle should be contained in cupboards which can be lifted in and out. A detailed description of these cupboards, together with dimensions and drawings, is given in Appendix A. The appendix also contains the schedule of equipment and stores arranged to show how they can conveniently be packed into the cupboards, and description of certain other furniture that will be needed.

In order to carry the cupboards, and the necessary equipment, the interior of the vehicles must be at least 8 feet 6 inches long, 5 feet wide and 6 feet high.

Personnel—

1 Doctor.
1 Fully trained nurse, if available.
2 Nursing Orderlies.
2 Stretcher bearers.
2 Lay personnel (one to act as messenger; one to fill in forms and keep records, etc.).

Stationed at.—On the declaration of a state of emergency, these vehicles might most suitably be stationed at hospitals, and they would remain at the hospital until required to proceed to the scene of an incident.

If it is not practicable to have a mobile first aid post at a hospital they must be located at convenient centres or combined Air Raid Precautions depots—and it must be remembered that linking up with a doctor is essential.

APPENDIX A.

The cupboards to contain the first aid equipment are to be made up on the expanding book-case plan, and constructed of three ply panels, in wooden framing and fitted with removal doors. Drawings are shown at the end of this appendix.

The basic unit consists of—

A bottom cupboard—A.
A middle cupboard—B.
An upper cupboard—C.

There will be two of these complete units.

The cupboards A, B and C are dowelled to fit each other, and the upper cupboards when empty can be up-ended to form Aid-Post furniture or used to form shelving. The lower cupboard would make a convenient table. Each piece of furniture has a scheduled list of contents as shown below.

The inside measurements of the cupboards are as follows:—

	Length.	Breadth.	Height.
	INCHES.	INCHES.	INCHES.
A	36	20½	30
B	36	16½	16
C	36	12½	12

Cupboard A is to be fitted with a transverse shelf 18½ inches above the level of the floor of the cupboard, and one of the two cupboards A in each unit is to be tin-topped for use as a table for a heating unit.

One of the two cupboards C in each unit will hold dangerous drugs, and must be fitted with lock and key to comply with D.D.A. regulations. In the same cupboard will be carried a box intended for the reception of:

(1) Surgical instruments, ligatures and syringes;
(2) anaesthetic equipment; and
(3) dangerous drugs.

The inside measurement of the box is to be:

Length—17". Breadth—7½". Height—6½".

The box should be fitted with a removable tray, for carrying the items under (1) above. The depth of the tray should be 1" and it should be divided up by partitions for syringe cases and instruments.

In addition to the two complete sets:

A 1.	B 1.	C 1
A 2.	B 2.	C 2

there will be required a long box, A 3, for splints, sticks, crutches, etc., and this box may be used as a sitting bench for personnel in transit.

Length—5' 6". Breadth—15". Height—17".

Two packing cases (A 4) for carrying heating and lighting units must also be provided.

In addition to these units of furniture filled, the vehicle must carry:

Trestles for stretchers	2 pairs
Watercontainers, three gallons	2 „

The Mobile First Aid Post should be packed as follows:—

Cupboard A 1.

Wool, cotton absorbent	2 lb.
Wool, cotton non-absorbent	2 lb.
Lint (in one lb. and 4 oz. packets)	2 lb.
Gauze (absorbent, 25 inches wide in packets of 3 yards folded)	6 packets.

Cupboard B 1.

Dressing, First Field	25
Bandages, triangular	24
Do. loose wove 4" × 6 yards	100
Do. do. 2½" × 6 yards	100
Do. Many tail	3

Cupboard C 1.

Acreflavin	25 tab.
Lysol	8 oz.
Liq. iodi mitis	4 oz.
Ol. ricini	1 oz.
Spt. Ammon. Aromat.	1 lb.
Soda bicarbonatis	8 oz.
Copper sulphate 2 per cent sol.	4 oz.
Ointment, antigas 2 oz. tins or jars	8 tins.
Tannalop (Tannic Acid Jelly) 2 oz. tubes	2 tubes.
Adhesive plaster	1 spool.
Safety pins, tins of 36	1
Eye shades	3
Tourniquets	2
Bath eye	1
Brushes, nail	2
Razor	1
Strap, leather	1
Hair clipper	1
Torches	3
Medicine glass 2 oz.	1
Scissors, stretcher bearers' (7 inches long, 1 blade pointed, 1 blade blunt).	2
Spirit methylated	4 pints.

Cupboard A 2.

Fish kettle sterilizer	1
Basin, kidney shaped	2
Bowl E.I., 8 inches round	2
Basin E.I. washing, 12" × 14" each	1
Trays E.I. dressing, 11" × 9" × 2"	1
Irrigator E.I., 2 pint complete	1
Jug E.I., graduated 1 pint	1
Jar, dressing, 10" × 7" E.I. with cover	2
Buckets, water (pail zinc)	1
Bed pan E.I.	1
Urine bottle E.I.	1
Water-proof sheeting I.R. width 36 inches	3 yards.
Feeding cups E.I.	1
Mugs E.I.	3
Soap, hand	2 cakes.
Candles	6
Match box	6

Cupboard B 2.

Surgeon overalls	One per Medical Officer on duty and one per nurse on duty.
Surgeon R. Gloves	
Surgeon towels	6
Hot water bottles I.R., 12″ × 8″	4
Splinting wood, Gooch's 24″ × 18″	3 pieces
Splints, wood, common arm sets of 8	2 sets.
Straps and buckets for splints	3 dozen.

Cupboard C 2.

Box for instruments, syringes, drugs, anæsthetics casuality—Tie-on-lables, pencil, etc.

In Box in C 2—	
Surgical instrument box or satchel—	
Forceps, artery	6
Do. Dissecting	1
Do. Sinus	1
Do. Dressing	2
Do. Splinter	1
Do. (Sterilizor) cheatles	1
Probe	1
Scissors, surgical	2 pairs.
Scalpel or knife, bard parker handle and blade No. 22	1
Tongue depressor metal	6
Catheter No. 8 I.R.	1
Syringe record, 10 c.f. with 2 needles in case	1
Syringe hypo, 2 c.f. with 2 needles in case	1
Spare needles for syringes box of	2
Silk surgical braided sterile No. 3 (T) in vial	6
Catgut sterilized, plain size, 'O' 5 feet strand in tube	1
Catgut sterilized, plain size, No. 3, 5 feet strand in tube	2
Silk work gut hank	1
Needles (suture) assorted	1
Anæsthetic outfit—	12
Mask	1
Airway, medium R.I.R.	1
Clip, tongue (cross action)	1
Mouth gag (Doyen)	1
Aether	8 oz.
Chloroform	4 oz.
Ol. Ric. in drop bottle	1 oz.
Standard drop bottle for anæsthetic	1
Procaine 1 per cent, 3 c.c. ampules	6
Small box containing drugs—	
Morphine Sulph. ¼ gr. 1 c.c. ampules (boxes of 6)	2 boxes.
Nikethamide 1·7 c.c. ampules (box of 5)	2 boxes.
Liq. Adrenaline hydrochlor—rubber capped bottle	1 oz.
Ung. Atrepine (1 per cent in ½ oz. tubes)	1 tube.
Sera A.T.S. ampules	3

Box A 3.

Thomas's splints knee	3
Long Listons splints (sets of six)	3 sets.
Posterior splints with foot pieces	4
Crutches	2 pairs.
Walking sticks	3
Two packing cases—A 4—	
Emergency heating and lighting units (Primus stove)	1
Urn, 3 gallon	1
Hot plate	1
On Floor—	
Water containers, 3 gallons	1 or 2
Stretcher trestles	1 pair.
Bleach powder	7 lb.
Hurricane lamps	3
Contents of Tea Box—	
Tea	2 lb.
Condensed milk	2 lb.
Sugar	3 lb.
Cups and saucers	3 sets.
Sauce pan	1
Spoons	3
Kettle E.I.	1

Maintenance of equipment.—Every care must be taken in the storage and use of this equipment, particular attention should be paid regarding the care necessary in drying nickel-plated surgical instruments and lubricating screws and joints. Enamel iron sterilizers, basins, bowls, etc., suffer damage by being placed in direct contact with the flame. The source of heat should be spread uniformly over the surface by, for instance, placing wire gauze (to be obtained locally) between the flame and the sterilizer. The heat should be moderate at first and gradually increased as the water warms up.

(2)

Letter from the Government of India, Home Department, New Delhi, dated 3rd/4th March 1941, No. 78-45/40-A.R.P.

[Structural precautions in Class I (Civil) towns.]

I am directed to say that the Government of India have had under consideration the measures of structural precautions necessary in India against damage by air raids in respect of buildings used for certain air raid precautions services. The conclusions at which the Government of India

have arrived at are that such structural precautions are necessary in class I towns in respect of the buildings used for the following purposes:—

Air Raid Precautions Control centres.
Fire stations.
Gas Defence centres.
Rescue and Demolition Party depots.

2. The Government of India do not consider that structural precautions against air raid damage for other air raid precautions services are necessary under present conditions. Nor are they prepared under present conditions to reimburse to Provincial Governments any expenditure which they may see fit to incur on structural precautions against air attacks in Police, Hospital and Fire Service buildings, other than fire stations, or in the living accommodation of the Police and Fire Service personnel.

3. The Government of India request all Provincial Governments to prepare as rapidly as possible schemes for structural precautions in the buildings mentioned in paragraph 1 of this letter, and to submit such schemes for the approval of the Government of India. The degree of structural precautions required is that sufficient to provide lateral protection against splinters of high explosive bombs not weighing more than 500 lb. exploding not less than 50 feet away, and protection against a direct hit with an incendiary bomb weighing 2 lb. The thickness of material required is described on page 1 of the Air Raid Precautions Handbook No. 1 issued by the Home Department.

(3)

Letter from the Government of India, Home Department (A.R.P. Section), New Delhi, dated 16th June 1941, No. 78-45/40-A.R.P.

[Structural precautions for Air Raid Precautions buildings.]

I am directed to refer to Government of India, Home Department, letter No. 78-45/40-A.R.P., dated the 4th of March 1941, and to state that in addition to the buildings for which structural precautions have to be prepared, the Government of India have decided that the following buildings should also be made blast and splinter proof and secure against falling debris:—

(*a*) Shelter for any staff over and above those on duty in the Control and Report centres.

(*b*) One room in each warden's post.

(*c*) Shelter for wardens who may have to report to a pre-arranged place in a section for which they are responsible.

(*d*) Shelter for the staff at each First Aid post.

(*e*) Operational offices in depots, also shelters for all Air Raid Precautions personnel based on those depots.

This decision has been made as Air Raid Precautions workers will have to be on duty in all these buildings during air raids.

The protection of gas defence centres and rescue depots should be held in abeyance pending further guidance on the organization of Air Raid Precautions depots.

The Government of India request all Provincial Governments to prepare schemes for structural precautions in the abovementioned buildings.

A note on protection against falling debris is attached for ready reference; it may be possible to amplify this further in the near future.

SUB-ENCLOSURE.

Recommendations for strengthening floors over shelters in buildings.

[Debris loading—Working stresses—Method of design—Supports to beams or slabs—Protection of new members against corrosion.]

Debris loading.—For shelters in basements it is necessary to provide a floor above the shelter having sufficient strength to support the fall of debris consequent on demolition of the superstructure. The superimposed loads shown in the table below should be assumed as a reasonable provision against the fall of debris. These loads are additional to the superimposed and dead loads which the floor is designed to carry for normal purposes and support must be given where necessary to the floor panels as well as to main beams and joists.

TABLE.

Additional superimposed loads to be assumed on the roofs over shelters to provide against the fall of debris from the superstructure.

(1) For buildings when loads are carried on load-bearing brickwork or masonry—

Number of storeys over.	Debris load to be assumed lb. per square feet of floor area in addition to normal load.
2	200
3 or 4	300
More than 4	400

(2) For buildings when loads are carried on steel or reinforced concrete frames the debris load may be assumed at 200 lb. per square foot of floor area, irrespective of the number of storeys over.

(3) For buildings which consist of a combination of load-bearing brick work or masonry with framed construction, some intermediate values for debris loads should be taken, based on the judgment of competent architects or engineers.

Permissible stresses.—The additional support to roofs over shelters should be designed according to the normal working stresses laid down in the various building regulations at present in force. *No increase of working stress is permissible.*

Methods of design.—The floor over shelters may be strengthened by providing additional support to the panels, and by decreasing the effective span of beams by the provision of suitable struts.

NOTE.—The superimposed loads given in the Table are a reasonable provision for the collapse of buildings or normal construction. If the buildings have abnormal features such as heavy colonnades, pediments, cornices, etc., which would be likely to produce abnormal debris loads, higher values should be taken according to the judgment of competent architects or engineers. The superimposed loads given in the Table are only sufficient to cover the fall of moderate amounts of very light machinery and plant. They are not sufficient to cover the fall of heavy machinery nor will it often be economically possible to strengthen the roof over a shelter sufficiently to withstand the fall of any but very light machines. No basement in which the fall of machinery or plant would constitute a serious danger to the occupants should be selected as a shelter.

Supports to beams and panels.—Where the effective span of beams or panels is shortened by the introduction of additional supports, due regard must be paid to the original design. Thus, in the case of reinforced concrete members the position of supports must be considered in relation to the arrangement of the reinforcement since additional support in the wrong position might actually weaken the member. It will usually be found necessary in practice to refer to the original drawings showing such details as weight and dimensions of steel beams and girders, and size and distribution of reinforcement in reinforced concrete structures.

Protection of beams and columns supporting debris loads.—All beams, sheeting and columns introduced to strengthen floors against debris loads must be treated where necessary to secure adequate resistance to corrosion. In the case of structural steel work this may be assumed to be afforded by paint treatment not inferior to the following:—

> After removing all loose scale, rust, oil and grease the steel shall be coated with not less than one coat of red lead or iron oxide paint followed by at least one coat of good paint of finishing quality, or with not less than two coats of properly compounded bituminous paint.

Concrete encasement of steel members introduced for the support of debris is not necessary but where, for the sake of permanence and freedom from paint maintenance, it is preferred to encase members in concrete there is no objection to this being done. In any case proper concrete encasement of steel members is desirable in industrial premises where any substances likely to induce corrosion of steelwork are used.

(4)

Letter from the Government of India, Home Department (A.R.P. Section), New Delhi, dated 8th July 1941, No. 78-45/40-A.R.P.

[Structural precautions for Air Raid Precautions buildings.]

I am directed to refer to Government of India, Home Department, letter No. 78-45/40-A.R.P., dated the 16th June 1941, and to state that the authorized structural precautions apply to Class II as well as to Class I towns.

In view of the revised nomenclature introduced by Government of India, Home Department, letter No. 78-207 (1)/41-A.R.P., dated the 3rd July 1941, the authority to carry out structural precautions mentioned in Government of India, Home Department, letter No. 78-45/40-A.R.P., dated the 3rd/4th March 1941, in respect of Gas Defence Centres (now called Decontamination Depots) and Rescue and Demolition Party depots (now called Rescue Party Depots) is cancelled, except where the work was carried out or was put in hand before the date of receipt of this letter. Decontamination depots and Rescue Party depots where established should be treated as any other Air Raid Precautions depot, *e.g.*, the operational office and the shelter for the Air Raid Precautions personnel are the only portions of the depot to be protected.

Government of India, Home Department, letter No. 78-45/40-A.R.P., dated the 3rd/4th March 1941, authorized structural precautions for Air Raid Precautions Control centres. Report centres are also to be protected.

Further to Government of India, Home Department, letter No. 78-45/40-A.R.P., dated the 6th June 1941, I am to say that the degree of protection to be afforded is that sufficient to provide lateral protection against the blast effect and splinters of high explosive bombs not weighing more than 500 lb. and exploding not less than 50 feet away and protection against the direct hit of any incendiary bomb weighing 2 lb. In addition the ceiling of the portion of the building to be protected should be made capable of bearing the weight of the debris, should the superstructure collapse.

(5)

Letter from the Government of India, Home Department (A.R.P. Section), to all Provincial Governments and Chief Commissioners, dated 11th September 1941, No. 78-215/41-A.R.P.

[Ambulances—Suggested stretcher carrier frame for lorries.]

I am directed to refer to paragraph 3 of Appendix E of Home Department letter No. 78-194/41-A.R.P., dated 26th June 1941, and to forward diagrams together with a description of a suggested stretcher carrier frame for use in lorries which may be converted as ambulances.

The carrier is designed to take the standard army pattern stretcher (7 feet 9 inches by 1 foot 11 inches by 6 inches) and to be placed in lorries of a suitable size at short notice.

It is hoped to forward suggestions on the conversion to ambulances of different types of private cars shortly.

The stretcher carrier frame.

To avoid interfering with the body of a bus or lorry in an attempt to adapt it to take stretchers, and so that the stretcher itself also remains unaltered the stretcher carrier frame is devised. The frame is simple of construction, consisting of lengths of wood, two lengths of angle iron and eight right-angled pieces of iron to strengthen the corners.

The diagram with specifications render an elaborate description unnecessary. The runners on which the stretcher will slide into the frame are made of 7½ feet lengths of 1½ inches angle iron.

These have not been placed close up to the wooden side bars of the frame but a little space is given so that no difficulty may be met with in pushing home a loaded stretcher carrying a patient covered perhaps with a blanket.

This of course applies only to the pushing home of a stretcher on the base of the frame.

It is important to note that the distance between the vertical parts of the angle iron lengths must be 20 inches--*not more*. This is important if the standard stretcher (army pattern) is to slide easily along the runners.

Again if the distance is 20 inches there is no possibility of the stretcher sliding off the runners at any point.

In the case of 3-ton lorries, carrying four stretcher frames, difficulty may be experienced in running the loaded stretcher through the first frame into the frame ahead, in the forepart of the lorry.

This difficulty is got over by using a rope with a hook at one end rove through a block, the latter fixed to the frame of the lorry by means of a hook. The end of the rope with the hook is passed down the centre of the frames and the hook fixed to the iron crossbar under the stretcher, which has been placed on the runners. The stretcher is then pulled along through the outer frame and on, into the frame in front.

The procedure, is reversed in unloading. The stretcher is simply pulled directly out by means of the hook and rope.

(6)

Letter from the Special A.R.P. Officer, to the Chief Secretary to Government, Public (A.R.P.) Department, dated 7th October 1941, No. 1868/41-A.R.P.

[War—A.R.P.—Ambulances—Stretcher carrier frame for lorries. *Reference.*—Public (A.R.P.) Department Memorandum No. 480-W-15, dated 24th September 1941.]

Under the Madras scheme as approved by the Area Committee, I have the honour to state it is proposed to equip each Combined A.R.P. Depot with two pucca ambulances belonging to the A.R.P. to form the nucleus of the larger number which will be called in on receipt of the alarm.

I do not think that lorries are altogether suitable for conversion to ambulances as their springs are very rigid and would cause considerable discomfort and possible danger to seriously injured persons. Lorries should, I think, only be considered in the last resort for ambulances.

The Berridge equipment has been proposed for use in earmarked buses here. This equipment is very simple and cheap to fix up costing only Rs. 52 per bus. It is also quicker to assemble taking only 10 to 15 minutes for a trained crew to instal.

The apparatus proposed by the Government of India would not be suitable for our buses unless it was made collapsible or were to be put together in parts in the bus itself. Again there is going to be considerable difficulty in inserting the bottom stretcher which will have to be done through the sides of the apparatus as it will not be possible, owing to the bus ends being closed, to push it through from the end. Further it does not seem very desirable as in the case of the bottom stretcher that man's head would be on the bus floor level, where there will be a certain amount of dust floating about. This defect does not appear in the Berridge equipment where the bottom stretcher is well raised from the ground.

With the rather bulky equipment proposed by the Government of India a large amount of space will be taken up for storing it in the various A.R.P. Combined Depots. With the very simple Berridge equipment the minimum storage space is required merely for the wall brackets, leather straps and stretchers.

With the Berridge equipment the bus can continue to run on the streets on its normal business with the first stage of the equipment installed until the siren sounds when it will immediately proceed to its nearest Depot, instal the second and final stage of its equipment (which takes ten to fifteen minutes) and hardly need keep off its normal duties for any length of time. Under the method proposed by the Government of India it would, I think, be necessary to take the bus off its normal duties from the time of preliminary warning is received.

The proposed equipment would be very suitable for use in lorries only but I consider the Berridge equipment is better for use in buses.

(7)

Government Memorandum No. 480/41-23, Public (A.R.P.) Department, dated 11th October 1941.
[War—Air Raid Precautions—Ambulances—Stretcher carrier frame for lorries.]

Copies of letter No. 78/215/41-A.R.P., dated 11th September 1941, from the Government of India, Home Department, and No. 1868/41-A.R.P., dated 7th October 1941, from the Special A.R.P. Officer, Madras, are forwarded to the District Magistrate of Vizagapatam / District Magistrate of East Godavari / District Magistrate of The Nilgiris / Administrative Officer, Cochin Harbour. in continuation of G.O. No. 1464, Public (War), dated 15th July 1941. He is informed that the Government of Madras consider that this equipment is suitable where it is proposed to convert *lorries* into temporary ambulances. When it is proposed to use *buses* the Government consider that the Berridge equipment as used in Madras is the more suitable as well as being cheaper and simple in operation.

(8)

Letter from the Joint Secretary to the Government of India, Home Department (A.R.P. Section), dated 30th July 1941, No. 78/208/41-A.R.P.

[Appointment of paid Air Raid Precautions officials to assist Controllers and Heads of Services.]

I am directed to refer to Government of India, Home Department, letter No. 78/194/41-A.R.P., dated the 26th June 1941, and No. 78/209/41-A.R.P., dated the 5th July 1941, regarding the organization of Air Raid Precautions training, and to say that consequent on the increase in the establishment of Air Raid Precautions personnel, the Government of India consider that there will be a need for the appointment of a certain number of paid officials to assist Controllers and Heads of Services. The Government of India are therefore prepared to meet their agreed share of expenditure described in the following paragraphs of this letter.

2. An Air Raid Precautions Officer should be appointed for every Class I and II town. His duties would include—

(*a*) the preparation and co-ordination of Air Raid Precautions Schemes.

(*b*) training as set out in Home Department letter No. 78/209/41-A.R.P., dated the 5/7th July 1941, paragraph 4 (*a*).

3. It is essential that Air Raid Precautions Officers in Class I and Class II towns with population of over 50,000 should be full-time officers, and it may be desirable that they should be full-time officers even in the smaller Class I or Class II towns. In Class III towns, however, normally the Air Raid Precautions Officer should be a part-time officer.

4. It may often be possible for the Air Raid Precautions Officer in Class I and Class II towns to be personally responsible for the duties described in paragraph 1, but it may be found necessary for him to be assisted by one or more specially appointed Training Officers, who would be responsible to him for training arrangements as set out in paragraph 2 (*b*) above.

The following is laid down as the scale of Training Officers and their assistants. It must be emphasized, however, that the exact number of officers required will vary considerably under local conditions. In towns with population of less than 250,000 the Air Raid Precautions Officer should not ordinarily require a Training Officer. In towns with populations between 250,000 and 500,000 the Air Raid Precautions Officer will normally need one Training Officer. In towns with populations between 500,000 to 1,000,000 one Training Officer and one or possibly two Assistant Training Officers will be required. The suggested rates of pay are as follows:—

	Rs.
Training Officer	200—300
Assistant Training Officer	100—150

5. Whilst every endeavour should be made to utilize the services of unpaid Air Raid Precautions Instructors, Class I, II and III it will probably be found necessary to appoint a certain number of whole-time permanent instructors and to pay part-time instructors for each period of instruction given. The employment of whole-time instructors is often a more economical arrangement than the payment of part-time instructors for each lesson given. Instructors will be necessary in Class I and Class II towns, and if a suitable volunteer cannot be found it may also be necessary to appoint a paid instructor in Class III towns.

6. The exact number of instructors cannot be laid down for each town nor can the approximate number of those likely to be required be given. But I am to ask that when applying to the Central Government for their agreement to contribute to a share of the expenses of the Air Raid Precautions Instructors, the Provincial Governments will report the following facts:—

(1) Whether instructors will work part-time or whole-time;

(2) the qualifications and experience of instructors;

(3) the number of Air Raid Precautions personnel to be trained;

(4) the time in which the training is to be completed.

(NOTE.—As Provincial Governments are aware, Class I and Class II instructors are those trained at the Air Raid Precautions School and Class III instructors are those trained locally. In the case of Class I and Class II instructors it is also necessary to insist on a minimum educational standard which should be matriculation.)

The following are suggested as suitable rates of pay for instructors:—

Class I and Class II Instructors (i.e., those *trained* at the Air Raid Precautions School, Calcutta)—Rs. 70—80 per mensem.

Class III Instructors (i.e., those trained locally by Class I or Class II Instructors)—Rs. 40—50 per mensem.

If instructors are employed part-time, it is suggested that the following scale of payment per lecture would be suitable:—

Rs. 2 per lecture by Class I and Class II Instructors and Re. 1 per lecture by Class III Instructors.

7. *Staff officers to Heads of Services—Specialist Instructors.*—The Head of an Air Raid Precautions Service is responsible for—

The organization and administration of the service.
The enrolment of personnel.
The safe custody of equipment.
The maintenance of records of personnel.
The organization and supervision of the training of the service in—
(*a*) the special duties of the service,
(*b*) training of leaders and deputy leaders of parties, and
(*c*) team training.

(*See* Air Raid Precautions Training Manual, No. 2, pages 8-11, 28-39 and Home Department letter No. 78/147/41-A.R.P., dated the 25/28th April 1941. "Air Raid Precautions Training Manuals, Nos. 1 and 2, Additional Syllabus.")

In some instances the Head of the Service may himself be able to carry out those duties but it will often be advisable to appoint one or more permanent paid staff officers to assist him. This point has been dealt with in Appendices A to H to Government of India letter No. 78/194/41-A.R.P., dated the 26th June 1941.

In addition Specialist Instructors specially trained under arrangements made by the Head of the Service to give the instruction mentioned in (*a*), (*b*) and (*c*) above will be required.

(*See* paragraph 8 of Home Department letter No. 78/209/41-A.R.P., dated the 5th July 1941.)

Whilst every endeavour should be made to utilize voluntary unpaid workers it may be found necessary to appoint whole-time Specialist Instructors and to pay instructors who volunteer to give lectures in their spare time.

The suggested maximum rates of pay for these officers are given below and any payment in excess of these rates should only be made with the prior concurrence of the Government of India:—

Staff officers to Heads of Services—(a) All Services except Wardens Services.—From Rs. 150—200 per mensem depending on the extent of his responsibilities.

(*b*) *Wardens Services*—

For a town not organized in divisions—Staff Officer to Chief Warden from Rs. 150—200.

For a town organized in divisions—
Staff Officer to Chief Warden—Rs. 250—300
Staff Officer to Divisional Warden—Rs. 150—200.

Specialist Instructors—

Whole-time Specialist Instructors—Rs. 70—80.

Part-time Specialist Instructors—Rs. 2 per lecture or period of practical instruction of approximately 1 to 1½ hours duration.

Medical Officers—

Rs. 5 for conducting an examination in First Aid under the St. John's Ambulance Association Rules.

Rs. 5 for each lecture or period of practical instruction of approximately 1 to 1½ hours duration.

8. This letter cancels Home Department letter No. 78/130/41-A.R.P., dated the 2nd April 1941. **1941.**

MODEL SCHEME FOR A.R.P. IN CLASS II TOWNS.

I. *Preamble.*—This should contain a very brief account of the salient geographical features of the town and of the main occupations of the inhabitants, also the latest figures of the population. It should state whether there is likely to be any difficulty in manœuvring fire engines, trailer pumps, etc., in any particular area, e.g., in Madura the difficulties that would be felt on account of the Masi and Veli streets being in the form of concentric squares without any direct cross roads. If it is felt desirable to include any adjacent areas not in municipal limits these should also be mentioned.

II. *Wardens' Service.*—The basis on which this service should be organized is set forth very clearly in Appendix C to this note. Subject to any modifications which may be required by local conditions, these instructions should be followed in detail. If any modifications are required, the reasons for them should be clearly explained in this portion of the draft scheme. The scheme should also contain in tabular form the serial letters of each division or group and against it a description of the area or areas covered by that group, e.g., municipal ward, number and name, etc. Specially important installations or factories such as, for instance, the Madura Mills or some of the larger mills at Coimbatore may with advantage be treated as separate divisions and encouraged to build up from among their employees their own organization. Six to eight posts will comprise a Group and six to eight Groups will comprise a Division. Each Post should be in charge of a Post Warden assisted by a Deputy. The maximum number of posts should not exceed ten to the square mile, but the actual number in each particular division will depend upon the geographical features and upon the intensity of population in the division. As far as possible all members of the Wardens' Service should be volunteers, but it is realized that it may not be possible to stick rigidly to this, particularly when a state of acute emergency arises and each warden's post has to be manned for 24 hours a day. If it is found necessary, the Government are prepared to sanction two paid wardens for each post and this should be borne in mind when preparing this portion of the scheme.

Training of Wardens.—It is most important that wardens should be properly trained as required by the Basic Training Manual, of which a copy is enclosed herewith. It will be necessary therefore to select a suitable building or buildings for use as training centres where lectures may be given and examinations held. Wherever possible, the use of public halls and schools should be obtained for this purpose and if possible without incurring payment of rent. It has not been found necessary to pay any travelling or other allowances to wardens for attending these instructions or courses and it will probably be better to have several training centres in various parts of the town so that wardens attending courses may not have to go far from their homes for that purpose.

Wardens' basic training should be carried out by the Special Officer and his class III Instructors, but if these are not sufficient they may be supplemented by a corps of lecturers, both European and Indian, enrolled for the purpose.

III. *Messenger Service.*—The numbers and equipment required are set out in Appendix B. For recruitment as messengers, Boy Scouts may be found extremely useful. But in recruiting such persons it must be remembered that no one under the age of 15 is entitled to full enrolment in the A.R.P. Services under the A.R.P. Services Ordinance and consequently not entitled to benefits of the War Injury Compensation Scheme. This does not prevent persons under 15 being employed, but in such cases care should be taken to obtain the written consent of the parent or guardian before any such juvenile is enrolled.

IV. *Control and Report Centres.*—The Control Centre is the " nerve-centre " of the whole organization and the greatest care must be taken to see that all those employed in it are thoroughly efficient and conversant with the duties they are required to perform. The organization and equipment required are set out in Appendix A. It should be pointed out that in that Appendix in paragraph 6 (*a*) (i) the expression " Civil Defence Commissioner " occurs. This title is not used in this Province, where the functions are discharged by the A.R.P. Controller which will be the title conferred upon the Special Officer when the A.R.P. Service is formally embodied under the A.R.P. Ordinance. Particular attention should also be paid to paragraph 3 and care should be taken to see that where necessary, more than one Report Centre is provided as it has been found in practice in Madras Fortress Area that one Report Centre cannot deal with more than 50 wardens' posts.

In Madras the Control Centre is in a room adjacent to the Telephone Exchange and it is suggested that wherever possible this principle should be followed in other towns as it will simplify the installation and working of the Control Centre telephone system. It must be stressed that there is a serious shortage in this country of telephone equipment and the greatest economy commensurate with efficiency in the use of telephones and equipment must be exercised.

The Special A.R.P. Officer will be in charge of the system of communications in the event of an emergency. There should be one Combined Control and Report Centre. It may be located either in the same building as the main A.R.P. depot, in the centre of the town, or, more preferably, in a separate building. It will consist of two rooms—the Message Room and the Map Room.

In the Message Room reception and transmission of messages will be dealt with. Provision will be made in this room for 5 ' IN ' Message telephones and 5 'OUT' ' Message telephones, for the Operators, a Message Supervisor and one Indoor Messenger. An Out-Door Messenger Room should also be attached to this so that if communications break down, Out-door Messengers could be utilized. Similarly, messages received through messengers could be handed in through the hatch into the Message Room, and there the appropriate number of copies taken and handed to the Message Supervisor.

The Map Room will be located next to the Message Room, a dividing wall being fitted between the two with two hatches one for ' IN ' and the other for ' OUT ' Messages. Provision will be made in this room to accommodate a Chart Writer, Records Clerk, Talley-board Clerk, Map Plotter and Messenger and the officer in charge of the Report Centre. Representatives of the essential services consisting of the Police, Fire, Public Works Department, Electricity, Water and Casualty Services will also be accommodated along with the A.R.P. Controller. These heads of services have to be provided with separate telephones. A large-scale map of the town has to be fixed to the wall so that the dispositions of the various A.R.P. Services and incidents may be plotted.

The Report Centre will be connected to such of the Wardens' Posts where telephones are available; otherwise the Messenger Service will operate. It should be manned day and night once a state of emergency is declared.

The warning will be received at the Control Centre from the Military authorities of the Air Raid Warning Zone in which the town has been included. The Air Raid Message Yellow will be passed on by the officer on duty through the warning system.

Use should be made of existing sirens where possible. A sufficient number of extra sirens should be provided to ensure that the warning can be heard in all parts of the town.

NOTE.—The method by which Air Raid Warnings will be communicated by the Military will be the subject of a separate reference.

V. *Fire Fighting Services.*—It is presumed that the municipality already maintains some sort of fire fighting unit. This however is not likely to be sufficient or adequate and it is doubtful whether it has a properly trained crew. Following the procedure adopted in Madras, this unit, such as it is, should be taken over by the Special Officer and a properly trained crew should be recruited under the control of a Fire Master. The town should be surveyed to decide how many more units will be required and this should be indented for without delay. " Fire engines " in the accepted sense of the term will not be provided, but as soon as they become available, Trailer Pumps of the Coventry Climax type will be supplied. For each of these a motor tender will be required with a crew of one Fire Officer (volunteer), one Deputy Fire Officer, two paid drivers, two paid fore-men, four paid firemen and eight Volunteer Auxiliary Fire Service Men, that is, two complete crews for each unit. Particular attention will have to be paid to the existing water-supply and to the number and efficiency of existing fire hydrants. It must be remembered that these trailer pumps have a delivery of 300 gallons per minute and the mains must be capable of supplying that quantity of water and of standing up to the pressure that delivery at this rate involves. It is probable that at least in some parts of the town, mains will not be able to cope with this pressure and it is therefore necessary to take steps to obtain access to temple and other tanks, irrigation channels, and even to provide special reservoirs of, say, 5,000 gallon capacity at various points in the town. Entry to the temple tanks and private wells can be enforced under rule 76 of the Defence of India Rules, powers under which have already been delegated to District Magistrates. The town should be divided into Air Raid Zones according to the fire risks involved and to each of these zones, one trailer pump should be allotted. Each unit will require, in addition to the crew mentioned above, two cyclist messengers.

Street Fire Parties.—In order that fires caused as a result of an Incendiary Bomb wave may be extinguished before they have a chance of spreading, it is necessary to organize and train Street Fire Parties to deal with such bombs as may fall anywhere in

the town. Street Fire Parties will be on a voluntary basis. They will form part of A.R.P. Services and will be under the orders of the A.R.P. Officer. Each Street Fire Party will consist of three persons and at least two, if possible more, parties will be organized for each stirrup pump so that the pump can be manned at short notice throughout the 24 hours. The number of Stirrup Pump Parties which will be required will be worked out on the basis of one stirrup pump for every 125 persons of the population. For each stirrup pump there should be two complete crews. In addition to stirrup pumps, each crew will require two buckets and one axe. As a further precaution against incendiary bombs, sand bags filled to three-quarters of their capacity with sand should be tied to lamp-posts, trees or other suitable objects or placed in the doorways of buildings so as to be ready for immediate use. The number of sand bags that will be required for this purpose should be calculated on the basis of one bag for every 50 yards of street in built-up areas, plus a reserve of 100 per cent. Sand bags should be obtained from the Supply Department through Government.

VI. *Casualty Service.*—Under this head there will be First Aid Posts and Ambulance Service and First Aid Parties, full details of which are given in Appendices D, E and F. The Government Headquarters Hospital should be the base hospital, but if it is considered desirable in view of local conditions, and other fully equipped hospitals, such as the American Mission Hospital in Madura, are available, the organization may be based on more than one base hospital.

As much use as possible should be made of Mobile First Aid Units, details of the organization of which are given in Government of India, Civil Defence Department, letter No. 78-309/41, A.R.P. (Medical), dated 11th November 1941 (copy enclosed).

VII. *Rescue Services.*—Details for the organization of these are given in Appendix G.

VIII. *Combined depots.*—The Special Officer will have to decide on the most convenient arrangement of these depots having regard to the most suitable divisions into which the town can be split up for the purpose. At each depot, the First Aid Parties, Ambulances, Rescue Parties and Fire Fighting Service Units for that particular division will be stabled. The organization and method of working of these depots are set out in Appendix H. As far as possible Depots and Report Centres should not be combined in the same building and adequate accommodation will have to be selected for both purposes. If no suitable buildings are available in any particular division of the town, it will be necessary to construct them and estimates for this purpose should be prepared and submitted without delay.

IX. *Decontamination Service.*—For the present it is not considered necessary to make any elaborate arrangements for dealing with gas in Class II areas. This service may therefore be ignored for the present.

X. *Essential Services.*—These are (1) Water supply, (2) Electric supply, (3) Telephones system and (4) Coal gas, if any such installation exists. The maintenance and protection of these services is the duty of the municipality or company operating them who should be required immediately to prepare schemes accordingly. It is probable at least in the case of municipally controlled essential services that the municipality will object on the ground that they have not got sufficient funds. This excuse cannot and must not be accepted. The municipality must proceed with the necesssary schemes and if it is indeed a fact that the municipality really cannot afford to finance the measures the fact should be reported to Government and the possibility of Government assistance to the municipality will be considered on the lines which have been worked out in conjunction with the Corporation of Madras. For essential services, all repair stores and equipment should be thoroughly overhauled and maintained at 50 per cent above normal requirements.

XI. *Structural Protections against High Explosive Bombs.*—Structural precautions are necessary in respect of buildings used for the following purposes :—

A.R.P. Control Centres and Shelters for other than those on duty in the room.

Fire Stations.

A.R.P. Combined Depots.

One room in each Wardens' Post.

First-aid Posts.

Copies of the Government of India, Home Department, Letter No. 78-45/40, A.R.P., dated 3rd March 1941, 16th June 1941 and 8th July 1941, on the subject are enclosed.

XII. *Transport.*—It will be clear from the foregoing that a considerable number of motor lorries, buses and cars will be required for the vaious services. A certain minimum of these will have to be purchased to form the basic organization and the policy of the Government has been that wherever possible new vehicles should be used for ambulances and for fire tenders. For rescue parties, second-hand lorries will probably be found adequate. For the rest it is suggested that motor bus and motor lorry companies may be asked to volunteer to lend a number of their vehicles for A.R.P. purposes and in such cases the following payments will be made:—

For an A.R.P. Practice.—Rs. 6 a day payable to the owner of the vehicle and 8 annas to the driver.

For an Air Raid.—Rs. 12 a day to the owner and Rs. 1-8-0 to the driver.

A refund of 25 per cent of the quarterly tax will also be given for each bus or lorry earmarked for A.R.P. purposes. For the conversion of motor buses (which must of course be of the closed pattern) into use as ambulances, a very simple devise known as the Berridge equipment adopted in Madras has been found to be extremely satisfactory. Copy of Memorandum No. 480-W/41-23, Public (A.R.P.), dated 11th October 1941, on the subject and its enclosures are enclosed. If a sufficient number of vehicles are not forthcoming on a voluntary basis the District Magistrate should report the fact to Government with the request for powers to requisition such extra transport as is required.

XIII. *Subsidiary Schemes:*—All large Government buildings and the premises of big firms and installations should have their own Subsidiary Schemes for dealing with incendiary bombs and the protection of their own personnel. A copy of the approved Subsidiary Scheme which is being enforced in Madras is enclosed and should be followed in those buildings for which Subsidiary Schemes are considered necessary

XIV. *Control of traffic in an Air Raid.*—A copy of the notification now in force in Madras for control of traffic during air raids is enclosed and it is suggested that it should be adopted as it stands.

XV. *General Control.*—The District Magistrate will be in general supervisory charge with the Special Officer as his executive assistant. The Special Officer will normally correspond through the District Magistrate, but in matters of routine he may correspond direct. All such correspondence should be addressed to the Chief Secretary, Public (Civil Defence) Department.

XVI. *A.R.P. Ordinance.*—A copy of the A.R.P. Services Ordinance and the rules framed thereunder are enclosed. As soon as it is possible to estimate with any reasonable certainty, the numbers to be enrolled in the A.R.P. Service for the time, the fact should be reported to Government in order that the formal appointment order required by the Ordinance may be issued. Information about the scheme for compensation under the War Injuries Scheme and Regulations under the War Injuries Ordinance, 1941, will be forwarded as soon as the scheme is finally approved by the Government of India and brought into force.

XVII. *Shelters.*—Slit trenches should be made for as large a part of the population as necessary up to 25 per cent. Special attention should be paid to the provision of trenches near the railway stations.

XVIII. *Maps.*—Maps of the town on a scale not smaller than 10 inches to a mile should be prepared for use in the Control Room, Special Officer's office, etc. The map should show the Wardens divisions, Posts, etc., location of Combined Depots, First Aid Posts, etc. Two copies of the map should be furnished to Government. If maps of the required scale are not available the Survey department should be asked to prepare them at once.

XIX. *Instructional Staff.*—To assist Controllers and Heads of Services there may be need for the appointment of a certain number of paid officers. A copy of the Government of India's instructions on the subject is enclosed.

APPENDIX A.

Control and Report Centres.

1. *Control.*—A responsible officer should be placed in charge of the A.R.P. Communications system. In addition to the planning of Control and Report Centres he should be responsible for the enrolment, organization, administration and training of the personnel.

2. *Number of Control Centres.*—There should be a Control Centre which should preferably be combined with the Report Centre in every Class I and II town.

3. *Number of Report Centres.*—It has been found that one Report Centre can under severe raiding conditions, cope with the traffic of approximately 50 Warden posts, provided the Wardens are trained only to send messages.

4. Provided the Wardens Service is organized on the basis of not more than 10 posts to the square mile there should, therefore, be only one Report Centre per 50 posts or less. If there are substantially more than 50 posts the matter should receive special consideration by an experienced A.R.P. Officer and a technical officer of the Posts and Telegraphs Department.

In any case the Control Centre should be combined with one of the Report Centres—[*See* Annexure (*a*)].

5. *Size of Control and Report Centres.*—*See* Annexure (*a*).

6. *Number of telephones.*—

(*a*) Exchange telephones—

(i) Control Room—

1 for (Civil Defence Commissioner A.R.P. Controller).
1 for each head of A.R.P. service in Control Room.

(ii) Report Centre—

1 for officer in charge.

(iii) Message Room—

Town of	41—50	Wardens posts in which there	are telephones	6 In 6 Out
Do.	31—40	do.	do.	5 „ 5 „
Do.	19 30	do.	do.	4 „ 4 „
Do.	10—18	do.	do.	3 „ 3 „
Do.	6— 9	do.	do.	2 „ 2 „

1 Special for Warnings.

(*b*) Direct line telephones—

(i) In Control Room—

1 to Military Headquarters.
1 to District or Provincial Government.

(ii) In Message Room—

1 to each Fire Station if Head of Fire Brigade has his Headquarters in Control Room.
1 to Fire Brigade Headquarters if Fire Headquarters is elsewhere than in Control Room.
1 to Police Headquarters.
1 to each Report Centre as necessary or Group Headquarters if established.

7. *Additional accommodation.*—Apart from the operational rooms of the Control and Report Centre, the following additional accommodation should be provided:—

(*a*) Feeding for personnel on duty.

(*b*) Rest Room.

(*c*) Sleeping for those on duty who are not expected to remain awake until the 'action' warning is received and for that proportion of other shifts who for any reason are unable to remain at their homes.

(*d*) Shelter for any staff over and above those on duty in the Control and Report Centres.

(*e*) Lavatory.

8. *Protection of the Control and Report Centres.*—The Control and Report Centres should be protected against the blast and splinter effect of high explosive bombs and against the fall of debris caused by the collapse of upper storeys; it should be capable of being made gas proof.

9. *Ventilation.*—Unless natural ventilation is possible it is necessary to provide an air conditioning plant supplying cool air in the hot weather. The air should be capable of being passed through a gas filter.

In some places it may be necessary to provide for heating in the winter.

10. *Lighting.*—An emergency lighting system should be installed.

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* Only for towns where permanent paid personnel are authorized.

11. *Personnel.*—The establishment for Report Centres of various sizes is given in Annexure (*b*), attached: 2 shifts are necessary where paid personnel are authorized. A reserve of 100 per cent should be trained.

12. *Equipment of Control and Report Centres*—(*a*) *General equipment.*—This is given in some detail in A.R.P. Memorandum No. 6 (2nd edition).

(*b*) *Personal protective equipment.*—One Civilian Duty Respirator per person 25 per cent. This is only to be supplied when the Control or Report Centre is not capable of being made gas proof.

ANNEXURE (*a*).

Guide to size of Control and Report Centres.

Number of Wardens posts in area.	Control Room assuming four Services Representatives.	Officer in charge of Report Centre and Map Room.	Message Room.	Approximate Number of "IN" and "OUT" telephones in Message Room.		Number of messengers at one relief.	Message Room.
	FEET.	FEET.	FEET.	IN	OUT		SQ. FT.
41—50 posts	20 × 15	20 × 15	15 × 15	6	6	15	240
31—40 posts	20 × 15	18 × 15	12½ × 15	5	5	12	180
19—30 posts	20 × 15	18 × 15	10 × 15	4	4	12	180
10—18 posts	20 × 15	15 × 15	8 × 15	3	3	6	150
6— 9 posts	20 × 15	15 × 15	8 × 15	2	2	5	120

These rooms should preferably be combined. If this cannot be conveniently arranged they should adjoin with direct communication

ANNEXURE (*b*).

REPORT CENTRE.

Detail of one shift.

Detail.	In town having Warden posts to the number of					Male or female.
	41—50	31—40	19—30	10—18	6—9	
Officer-in-charge	1	1	1	1	1	Male.
Intelligence Officer	1	1	1	..	..	Male.
Plotting Officer	1	1	1	1	1	Male.
Chart writer	1	1	1	..	..	Male or female.
Tallyboard clerk	1	1	1	1	1	Male or female.
Message clerk for Officer i/c	1	1	1	1	1	Male or female.
Clerks, to assist Controller and Heads of Services (in Control room only) ..	2	2	2	1	1	Male or female.
Record clerk	1	1	1	1	1	Male or female.
Message Superintendent	1	1	1	1	1	Male or female.
Telephonists *	12	10	8	6	4	Male or female.
Messengers for internal duties	2	2	2	2	2	Male.
Total on shift ..	24	22	20	15	12	

* The establishment of telephonists should be decreased to the number of "in" and "out" telephones required for the number of Wardens posts which have telephones—Vide paragraph 6 (III) of Appendix B. Since, however, messages will be received from messengers in original, arrangements must be made for copyists to make the required number of copies for use in the Control and/or Report Centre.

APPENDIX B.

Outdoor Messenger Service.

1. Outdoor messengers are an essential part of the Air Raid Precautions Organization and provide an alternative means of communication in case of a breakdown of the telephone service.

They are required to provide communication from the Wardens Posts to the Report Centre and from the Report Centre to Wardens Posts, Air Raid Precautions Depots, First Aid Posts, etc., and also to the next higher authority.

2. *Control.*—The Officer-in-charge, Communications, is in general charge of this service. He will generally require a Staff Officer or Messenger Commandant, who should be responsible under his direction for the organization, administration, enrolment, training of the service and the maintenance of records. He should be provided with the necessary clerical staff.

3. *Numbers required.*—The following establishment is suggested:—

For each Control and Report Centres	
For each First Aid Post	
For each A.R.P. Depot, ambulance station, etc.	
For each Warden's Post	

* Where no telephone exists, otherwise one.

Amended - Vide
Public (Civil Defence) Dept.
Endorsement No.14285/42-1,
dated 22nd March 1942.

A reserve of 50 per cent of the establishment should be enrolled and trained. Full use of the Boy Scouts Organization should be made.

The numbers required for the Fire Service require special consideration in the light of local conditions. Messengers for the Fire Service should form part of that service and not of the Messenger Service.

4. *Equipment*—

1 bicycle—Per each messenger. A proportion of motor bicycles may be necessary when the Wardens Service relies on the use of messengers for posts where no telephone exists.

1 steel helmet
1 civilian duty respirator } per messenger.
1 eye shield

5. *Accommodation.*—Messengers should be considered when providing accommodation at Wardens Posts, Depots, Report Centres, etc.

APPENDIX C.

I. The Air Raid Wardens' Service.

1. *Wardens' post.*—The unit of organization for a wardens' service is the wardens' post which should serve several sectors each comprising a resident population of about 500.

2. The post should be in a prominent position in order that it can easily be found by wardens and members of the public. It should be sited as near as possible to the centre of the group of sectors which it serves.

3. The wardens' post is the place at which wardens allotted to the sectors served by the post and who are detailed to come on duty on the "action" Air Raid Warning being sounded would assemble. It is also the place from where they would telephone or send messages to the Report Centre. It may be that some of the sectors served by the post will be found to be too far from it to admit of the wardens residing in those sectors to proceed to the post before bombs might be expected to fall. Wardens of those sectors would assemble at a pre-arranged place in those sectors.

4. The post should be large to provide either in the same premises or nearby

(*a*) a message room in which should be a telephone if possible and necessary furniture. This room should be capable of affording protection for the wardens using the room, against blast and splinters of high explosive bombs, protection against the fall of debris;

(*b*) room for the storage in war of the equipment of the wardens who are to report at the post;

(*c*) in the case of towns having paid personnel or the authorized establishment—sleeping accommodation for those wardens on duty (two at the most sleeping and one awake) at night; and

(*d*) lavatory accommodation.

For those wardens who may have to report to a pre-arranged place in the sector for which they are responsible a small shelter should be provided. Their equipment being kept at the house of a selected warden in the sector, preferably near the shelter.

NOTE.—(Where suitable existing premises have not been obtainable, concrete posts have been constructed at home.) Their approximate internal dimensions are 6 feet by 9 feet. A post of this size does not afford all the accommodation mentioned above, the remainder is found in the vicinity or special huts are erected.

5. The post should be provided with means of boiling water and have some form of heating apparatus in winter.

(NOTE.—Only for towns authorized a paid establishment.)

6. Provision should also be made for a room where the post warden can give instruction to the wardens of the post area. It may be found satisfactory and possibly more economical to group a number of posts for this purpose.

II. Spacing of Wardens' Posts.

1. A maximum of about 10 posts to the square mile should be sufficient to meet requirements in fully built up and densely populated areas. It being understood that in the less densely populated parts and on the outskirts of towns the spacing of posts would be more sparse.

2. The A.R.P. authority, having determined the number of posts and their location on the principles laid down above, should proceed to select the premises to be used. In exceptional cases it may be found necessary specially to construct a post or a number of posts.

III. Numbers of Wardens.

1. The establishment is 4 wardens per 500 population in important urban areas and a lower proportion for other areas.

Additional persons up to 50 per cent of the authorized establishment should be enrolled and trained in order to provide a reserve to be called upon in case of need.

2. Where there are large blocks of flats and tenements with more than say 50 to 100 residents, special wardens should be appointed for each block (chosen from those living or employed in the premises where possible) and these wardens could be of assistance to the wardens in the posts in the streets. The sector worked from the post could in such circumstances contain more than 500 residents.

3. While wardens organized by industrial, commercial and public utility undertakings do not, as such, form part of the public wardens service, they should have a sound knowledge of the working of the local A.R.P. scheme. The managers of such undertakings should be informed that all messages for assistance should be sent through the wardens' post and not direct to the Report Centre. Exception to this rule should be made in the case of category A and category B factories.

IV. Organization of the Wardens' Service.

1. A responsible officer should be deputed to exercise supervision and control of the service.

2. The executive head of the wardens' service should be a chief warden, who will require a deputy. These officers should not be paid officials, but will be volunteers as are other members of the wardens' service.

3. The number of subordinates whom the Chief Warden will require will depend on the total number of posts under his control. Posts should be organized in groups of 6—8 posts each under a Head Warden. Where there are more than eight groups they should be organized in Divisions containing 6—8 groups each under a Divisional Warden.

The post should be placed in charge of a Post Warden and a Deputy Post Warden appointed to assist him and to act as his relief. The Post Warden will be in charge of the wardens in the post area.

4. Each group of posts should be distinguished by a letter. The posts belonging to a group will be indicated by that letter, coupled with a number—thus one group of posts would be Group A and the posts in the group would be numbered A-1, A-2, A-3 and so on. It is preferable, for purposes of reporting in war, that the numbering series A-1, A-2, etc., should be the numbers of the *posts*, not of the sectors, which may be otherwise distinguished, e.g., where more than one sector is attached to post A-1, the sectors might be known as sectors A-1 (*a*), A-1 (*b*), etc.

5. Where the wardens, in the area of any one Chief Warden are organized in more than four groups it is desirable that there should be, as a paid appointment, an officer whose principal duty it would be to foster the efficiency of the wardens' service, in addition to taking charge of the routine duties of training and organization. This officer should act as Chief Assistant to the Chief Warden. In areas large enough to have the wardens' groups organized in divisions, a similar Divisional Assistant should be appointed to assist the Divisional Warden.

These Assistants should be provided with such clerical assistance as is required for maintaining proper records, etc.

6. The Chief Warden, Divisional Warden, Head Warden and Post Warden should take part in arranging for the recruitment and training of wardens, and should be responsible for allotting them to posts and arranging rotas of duty, replacement in cases of sickness or injury, and so on. With the exception of the Post Warden, they would not, however, constitute a chain of communication in time of air raids, the individual wardens would send their reports direct in accordance with the local instructions and not through their Head, Divisional or Chief Wardens.

V. Equipment.

(*a*) Post equipment—

One First Aid box containing—

Bandages, triangular	9
Canes, for tightening improvised tourniquets	3
Dressing, shell	6
Dressing, First Field	6
Ointment, anti-gas, 2 oz. tins or jars	2
Safety pins (large), cards of 6	3
Scissors	1 pair
Tourniquet	1

One stirrup pump—Handbell.

(*b*) Wardens equipment—

One card of appointment.
One armlet.
One badge.
One civilian duty respirator.
One eye shield.
One steel helmet.
Manuscript for making reports.
One electric torch.
One whistle.
One hand rattle.

VI. CARD OF APPOINTMENT.

Wardens should be provided with a card of appointment as evidence of their *bona fides* in their dealings with people in their sectors. An A.R.P. Badge or armlet is not evidence of authority to act as a warden. A suggested form of card, which should be signed by the officer in control of the wardens' service is given below. It is advisable that a photograph of the warden should be placed on the back of the card and stamped with a seal of the A.R.P. authority concerned.

NAME OF AIR RAID PRECAUTIONS AUTHORITY.

Air Raid Precautions.

This is to certify that ..... (*name and address of warden*) has been duly appointed as an Air Raid Warden. This is his authority to carry out the duties laid upon wardens by the (name of A.R.P. authority).

(Signed) .....

Officer-in-Charge, Wardens' Service.

Date of issue of card .....

Date of appointment of Warden .....

Signature of Warden .....

APPENDIX D.

First Aid Posts.

1. *Control.*—The Officer-in-Charge, the Casualty Organization, is in general charge of the First Aid Post Organization in peace and war. Where there are more than three First Aid Posts, he should have, to assist him, a staff officer or First Aid Commandant who should be responsible under his direction for the organization and administration of the posts, the enrolment and training of the personnel, and the maintenance of records. He should be provided with the necessary clerical staff. This officer would be in command of the First Aid Post Organization after receipt of the preliminary warning.

When the Casualty Organization is so small as not to need a staff officer for each Casualty Service, e.g., First Aid Post Organization, Ambulance Service and First Aid Party Service it may be possible for the officer-in-charge of the Casualty Organization to be personally responsible for the above matters in respect of all these services. In some instances one Staff Officer for all these services would be sufficient assistance.

Each First Aid Post should be in charge of a doctor. He will be directly responsible for the efficiency of the First Aid Post personnel.

2. *Function of a First Aid Post.*—First Aid Posts are designed to receive persons suffering from comparatively minor injuries and in some instances lightly wounded or unwounded gas contaminated persons.

It is intended that First Aid Posts should deal with light as distinct from serious cases, e.g., cases requiring treatment which can properly be given initially by personnel trained in First Aid.

Serious cases, e.g., cases calling for urgent medical or surgical attention, such as may be obtained only at a properly equipped hospital, would derive no further benefit from further first aid treatment after having received attention from the First Aid Party and might indeed suffer by delay. Such cases should accordingly be sent direct to hospital and should not pass through a First Aid Post at all.

Any stretcher case should be placed in an Ambulance brought as near as possible to the incident and sent direct to hospital; walking cases, and those able to travel in a car for sitting cases should be directed to a First Aid Post.

3. *Spacing of posts.*—The normal rule is that adjacent posts should be less than two miles apart so that no casualty would have to go (as he walks not as the crow flies) more than a mile to reach a post.

4. *Size of First Aid Posts.*—The size of a post (large, medium, or small) should depend on the population within the area to be served by the post, and on the fact that the more vulnerable areas require more provision than the less vulnerable areas.

The following is given as a guide:—

Population in area of post.	Size of post.
30,000—60,000	Large.
20,000—30,000	Medium.
3,000—20,000	Small.

5. *Layout of First Aid Posts.*—The rate of flow of patients through each type of First Aid Post, type plans, and description of post is given in detail in Home Office (A.R.P. Department) letter No. 701513/8, dated 26th April 1938, "First Aid Posts"—*See* Annexure (*a*) to this appendix. This should be modified to Indian and local conditions.

The Cleansing Station should only be provided where it has already been authorized by the Central Government. A shelter for the staff should also be provided.

6. *Personnel.*—It is suggested that the establishment of the post should be approximately as follows:—

Large post	30
Medium post	20
Small post	15

There will be a doctor in charge of each First Aid Post and his staff will include at least one fully trained nurse in addition to first aid workers, stretcher bearers, required for work within the posts and not in the streets, door-keepers, clerks, storemen, etc.

A reserve of 25 per cent should be enrolled in order that casualties may readily be replaced.

7. *Medical equipment of First Aid Posts—*

REVISED SCALE OF MEDICAL STORES AND EQUIPMENT FOR FIRST AID POSTS.

(Vide Appendix D, paragraph 7.)

Item.	*Medical.* First Aid Post. Small medium.	Large.	Percentage of reserve.	Remarks.
(1)	(2)	(3)	(4)	(5)
Acreflavin .. .. Tab.	25	50	50	Substitute Eusol, 1gal. for small post.
Lysol, 8 oz. bottle	1	1	50	....
Liquor iodi mitis .. .. oz.	4	8	50	Substitute Picric acid sol. 5 per cent in alcohol, oz. 8.
Morphine Sulph., ¼ gr. 1 c.c. ampoules boxes of 6 .. .. Boxes.	1	2	50	....
Nikethamide, 1·7 c.c. ampoules, boxes of 5. Boxes.	1	2	50	....
Liq. Adrenalin Hydrochlor. .. .. oz.	1	1	25	....
Oleum ricini .. .. oz.	1	1	25	....
Spt. Ammon. Aromat. .. .. .. lb.	1	2	50	....
Sodii Bicarbonas .. .. .. oz.	8	8	50	....
Sera A.T.S. ampoules	3	6	50	....
Tannalep 4 oz. tubes (substitute "Tannafax").	2	4	25	....
Unguentum Atropinæ (1 per cent in ½ oz. tubes).	1	2	15	....
Spirit, methylated, mineralised .. Pints.	4	8	50	....
Chloroform .. .. oz.	4	8	25	....
Aether .. .. oz.	8	16	50	....
Drop bottle 1	1	2	15	....
Mask	1	1	..	....
Airway—Medium I.R.	1	1	..	....
Clip Tongue (cross action)	1	1	..	....
Mouth gag (Doyen)	1	1	..	....
Procain 1 per cent 3 c.c. ampoules	3	6	25	....
Bandages, loose wove, 4″ × 6 yards	100	200	75	....
Bandages, loose wove, 2½″ × 6 yards.. ..	100	200	75	....
Bandages, triangular	18	36	50	....
Bandages, many tailed	3	6	15	....
Dressing, First Field	25	75	100	....
„ shell	10	30	75	....
Gauze, absorbent, 25″ wide in pkts. of 3 yards folded .. .. Pkts.	6	18	50	....
Lint cotton., absorbent in 1 lb. pkts. ..	1	2		
Do. 4 oz. pkts. ..	4	8	50	....
	2 lb.	4 lb.		
Wool., cotton, absorbent 1 lb. pkts. .. lb.	2	6	75	....
Do. non-absorbent .. .. lb.	2	4	50	....
Plaster, adhesive, zinc oxide, 3″ × 10 yards spool .. .. Spools.	1	2	50	....
Needles, assorted	6	12	25	....
Silk, surgical braided, sterilized, No. 3 (T) in vial.	1	2	25	Substitute silk thread in bank.
Catgut, sterilized plain size 'O' 5 feet strand in tube.	1	2	25	Substitute cotton thread as prepared by the Cruickshank technique.
Forceps, aretery 5″ .. .. *	4	8	..	....
„ dissecting .. .. *	1	2	..	....
„ sinus 7″ .. .. *	1	2	..	....
„ dressing .. .. *	1	2	..	....
„ (sterilizer) Cheatles	1	1	..	....
Probe .. .. *	1	2	..	....

* Per Medical Officer on duty only.

Item.	First Aid Post. Small / Medium	First Aid Post. Large.	Percentage of reserve	Remarks.
(1)	(2)	(3)	(4)	(5)
Scissors, surgical	* 1	2	..	....
Scalpel	* 1	2	..	....
or				
Knife B.P., handle	1	1	..	....
" blade No. 22	3	6	25	....
Splinter forceps	* 1	1	..	....
Tongue Depressor, metal	* 1	2	..	....
Surgeon's overalls	..	..	..	.... One per medical officer on duty and one per nurse on duty.
Surgeon's rubber gloves size .. .. .. pairs.	1	2	15	....
Scissors, stretcher bearers' (7" long, 1 blade pointed, 1 blade blunt).	2	4	..	....
Catheter No. 8 I.R.	1	1	..	....
Razor, common	1	1	..	....
Strop, leather	1	1	..	....
Hair clipper	1	1	..	....
Syringe, hypodermic 2 c.c. with 2 needles in case.	1	2	25	....
Syringe Record, 10 c.c. with 2 needles, in case.	1	2	15	....
Syringe hypodermic needles, spare, for 2 c.c.	4	8	25	....
Do. 10 c.c. ..	2	4	15	....
Medicine Glass, 2 oz.	1	1	..	....
Pins, safety, tins of 36	1	3	75	....
Tourniquet	2	4	10	....
Splinting, Gooche's wood 24" × 18" pieces ..	2	4	50	....
Splints, arm, wood, plain sets of 8	1	1	15	....
Splints, knee, Thomas's without foot-pieces ..	3	6	15	....
Splints, Liston's Long, sets of six	2	4	25	....
Splints posterior, wood with a foot-piece ..	4	8	15	....
Straps and buckles for splints .. .. .. doz.	2	4	25	....
Bath, eye, glass	1	2	..	....
Eye shades	3	6	25	....
Irrigator, E.I., 2 pint, Complete	1	2	..	....
Hot water bottle I.R. 12" × 8"	2	4	25	....
Sterilizer, fish kettle with lamp complete, size 15" × 5" × 4".	1	2	..	....
Stoves, paraffin, "Primus" 1 burner ..	1	2	..	....
Basin, dressing, E.I., Kidney-shape 10 in. ..	2	3	..	....
Bowl, E.I., 8 in.	2	2	..	....
Jug, measure E.I., graduated 1 pint	1	1	..	....
Jar, dressing 10" × 7" E.I., with cover ..	2	3	..	.... Substitute any tin container with a tight-fitting lid.
Tray, dressing, E.I., 11" × 9" × 2"	1	2	..	....
Basin, E.I., washing, 14"	2	4	..	....
Bedpan	1	1	..	....
Bin, ash, large	1	2	..	....
Bottle, urine, E.I.	1	1	..	....
Brush, nail, ward	1	2	..	....
Cup, feeding, E.I.	1	2	..	....
Mug, enamelled	3	6	..	....
Pail, zinc	1	2	..	....
Table with trestles size	1	2	..	....
Pair of trestles	1	1	..	....
Lamp, hurricane	..	..	..	.... One hurricane lamp per room and one petromax in dressing room.
Candles	6	6	10	....
Matchboxes	6	12	10	....
Towel, hand, size	4	8	25	....
Soap, hand, cakes	2	4	75	....
Soap, washing .. .. lb.	1	1	50	....
Floor mop—short handle	1	1	..	....
Stretchers, ambulance (standard Army Pattern).	6	6	..	....
Sheets water proof width 36" .. .. .. yds.	3	6	..	....
Blankets	12	12	25	....
Crutches .. .. pairs.	2	3	10	....
Walking sticks	3	6	10	....
Pencil	1	2	25	....
Torches, with dry battery	2	4	25	....
Spare dry battery	2	4	25	....

* Per Medical Officer on duty.

Item.	First Aid Post. Small Medium	First Aid Post. Large.	Percentage of reserve.	Remarks.
(1)	(2)	(3)	(4)	(5)
Casualty Register	..	..	..	....
Tie-on-labels, set of 18 in an envelope ..sets.	..	..	..	....
* Tea box	1	1	..	....

Contents of tea box—

Tea	2 lb.
Condensed milk	2 ,,
Sugar	4 ,,
Cups and saucers	3 sets.
Sauce pan	1
Spoons	3
Kettle E.I.	1

NOTE.—(1) The scale f equipment is based on, approximately, treatment of 50 casualties at small and medium posts and 100 casualties at a large post.
(2) The scale does not include furnishings and fittings.
(3) Percentage of reserve is given for expandible articles only. This reserve should be available for immediate use, as stated in paragraph 4 of the letter.
(4) Certain non-expandible articles are treated as expandible for replacement due to breakage, e.g., syringes, needles, etc., or which having been used on casualties or not returned to the First Aid Post, e.g., splints, tourniquets etc.

ADDITIONAL MEDICAL STORES AND EQUIPMENT FOR A FIRST AID POST IN WHICH FACILITIES ARE PROVIDED FOR DEALING WITH UNWOUNDED AND WOUNDED GAS CONTAMINATED PERSONS (BOTH SEXES).

Item.		First Aid Post. Small and medium.	First Aid Post. Large.	Percentage of reserve.
Soda Bicarb	oz.	8	16	50
Sodium Chloride, or ordinary salt	lb.	2	4	50
Oleum Ricini	oz.	1	2	50
Paraffinum Liquidum	oz.	4	8	50
Bleaching Powder	lb.	56	112	50
Antigas ointment No. 1 or 2	2 oz. tins doz.	1	2	25
Soap, Yellow	lb.	7	14	50
Trays for bleach		2	4	..
Eye douche		1	2	..
Brushes, distemper		1	2	..
Towels, bath, Turkish	doz.	1	2	25
Receptacle for used towels		1	2	..
Bin for contaminated clothing		1	2	..
Bath 4′ × 2′ 6″ × 1′ deep		* 2	2	..
Showers fitted for hot and cold water		† 4	4	..
Clothing		..	..	..

* One for male, one for female.
† Two for male, two for female.

REVISED SCALE OF CONTENTS OF AN AMBULANCE SATCHEL.

[*Ref.*: Appendix E, paragraph 5 (*b*).]

Contents of an Ambulance Satchel—	
Bandages, triangular	6
Do. 2½ inches	6
Cotton wool 1 oz. packets	6
Dressing, First Field	12
Lint Cotton 1 oz. packets	6
Safety pins (large) cards of 6	3
Scissors	1 pair.
Tourniquet	1

REVISED SCALE OF CONTENTS OF A HAVERSACK AND POUCH FOR FIRST AID PARTIES.

[Vide Appendix F, Annexure (*a*).]

Contents of a Haversack—	
Bandages, triangular	36
Canes for tightening improvised tourniquets	8
Cotton wool, 1 oz. packets	6
Dressing, shell	18
Dressing, first field	12
Lint, unmedicated, in squares about 18″×12″	6
Ointment, antigas, 2 oz. tins or jars	8
Safety pins, large, cards of 6	8
Clasp knife	1
Scissors (7″ long, 1 blade pointed and 1 blade blunt)	1
Tourniquet	2
Splints, sectional wooden sets	2
Straps for sectional splints	18
Torch, electric	1
Pencil, lead	1

Contents of a Pouch—		
Bandages, triangular	9	
Canes for tightening improvised tourniquets	3	
Dressing, shell	6	
Dressing, First Field	6	
Labels, casualty identity, packets of 18	1	packet.
Ointment, anti-gas, 2 oz. tins or jars	1	
Safety pins, large, cards of 6	3	
Clasp knife	1	
Scissors (7" long, 1 blade pointed and 1 blade blunt)	1	
Tourniquet	1	
Per Party—		
Splints Listen or splints, leg, sets	3	
Straps for splints, leg	21	

* To be carried separately.

REVISED SCALE OF CONTENTS OF A POUCH FOR A RESCUE PARTY.

[Vide Appendix G, paragraph 4, Annexure (*b*)—(*c*).]

Equipment for Rescue Party.

Contents of Pouch—		
Bandages, triangular	9	
Canes, for tightening improvised tourniquets	3	
Dressing, shell	6	
Dressing, First Field	6	
Labels, casualty identity, packets of 18	1	packet.
Ointment, anti-gas, 2 oz. tins or jars	1	
Safety pins (large), cards of 6	3	
Scissors	1	pair.
Tourniquet	1	

REVISED SCALE OF CONTENTS OF A FIRST AID BOX FOR A RESCUE PARTY.

[*Vide* Appendix G, Annexure (*c*).]

Equipment for a Rescue Party.

Contents of First Aid Box—		
Bandages, triangular	12	
Canes, for tightening improvised tourniquets	3	
Dressing, shell	6	
Dressing, First Field	6	
Lint unmedicated, in squares about 18 inches by 12 inches	6	
Ointment, antigas, 2 oz. tins or jars	2	
Safety pins (large), cards of 6	4	
Clasp knife	1	
Tourniquet	2	
Splints, leg, sets	2	
Straps for leg splints	14	

* To be carried separately from box.

TREATMENT OF BURN (OTHER THAN FROM POISON GAS) AND SCALDS.

First Aid Treatment.

I. *Instruction to lay personnel.*—If patient's clothes are on fire, do not allow him/her to run about, particularly out of doors. Smother flames by blanket or rug and rolling on ground. Lay the patient flat in warm place out of droughts preferably in bed.

Do not remove clothing or expose burned surface.

Do not apply oil, grease, flour, soot, etc.

Do not give the patient castor oil or any other medicine.

II. *First aid treatment of burns by first aid parties, wardens and rescue service personnel.*—(*a*) Dry unmedicated first aid dressings should be applied without delay and with the least possible handling of the burn and the surrounding skin. First Aid Party pouches contain dressing shell or First Field dressings, these should be used. Should this reserve become exhausted, unmedicated squares of lint (6 inches square) should be used.

In the absence of any of the above dressings the affected part should be covered with a clean soft cloth or cotton wool and bandaged.

Patients with severe burns, must be sent to the nearest hospital at once; those with minor burns should be sent to the nearest First Aid Post.

(*b*) Clothing should not be removed unless absolutely necessary. If garments must be taken off, great care should be used. If the material sticks, it is necessary to cut around the pieces of cloth which adhere to the flesh so as to have them in position when the garments are removed.

If blisters have formed they must not be broken or punctured, but should as far as possible be protected and kept intact.

III. *Treatment of burns at first aid posts.*—(*a*) Minor burns, which do not require admission to hospital, should, after cleansing the surface with soap and water, be dressed in the following way:—

(i) In the case of face or hands, with gauze or lint impregnated with sterilized vaseline.

(ii) In other parts of the body with Tannic acid jelly or Gentian Violet Jelly 1 per cent.

Do not apply any dressing over the burn area.

Do not allow the clothing to come in contact with the burn area until the coagulum is formed and is dry.

Do not apply Tannic acid jelly or other coagulent jelly to the burn unless the burn has been adequately cleansed.

(*b*) *Serious burns requiring hospital admission.*—Cover the exposed portion of burn with sterile gauze or lint.

No attempts should be made to remove clothing in order to expose the entire burn area, provided the patient is shortly to be transferred to a nearby hospital.

Serious burns require injection of morphine (1/3 to ½ gr. for adults), noting dose and time on accompanying slip to hospital.

Combat shock by keeping patient warm, wrap patient in blanket, hot sweet drinks should be given in quantity.

Keep patient warm during transport to hospital.

IV. If the extent of burn is of less than 5 per cent and of first or second degree, the doctor can direct the patient for treatement at a First Aid Post or to Hospital.

Burns between 5—15 per cent should be admitted to hospital for few days.

Burns greater than 15 per cent skin surface should remain in hospital till healing well advanced.

Sulphonamide, by mouth, should be given from the beginning to prevent sepsis.

V. *Treatment of phosphorus burns.*—Patients may be brought to the First Aid Post or the Hospital suffering from burns caused by incendiary bombs. The bomb fragments contain a certain amount of phosphorous which will continue to burn the skin unless its action is quickly counteracted. To prevent this burning continuing, the following methods are suggested:—

Cover the burn area with a gauze or lint soaked in

(*a*) Two per cent solution of copper sulphate. (The action of the copper sulphate is to coat particles of phosphorous with an inert compound by chemical action and prevent their continuing to burn and enable their removal to be carried out subsequently).

(*b*) 5 per cent solution of soda bi-carbonate.

(*c*) In the absence of above solutions, the first aid treatment should consist in the immersion of the affected part in water or the application of a thick pad soaked in water.

The particles imbedded in the skin can be removed, under water by means of forceps or a gauze sponge, care being taken that none of the fragments are overlooked. The remaining burn should be treated as thermol burns. Avoid oils or greasy dressing unless absolutely certain that all the fragments have been removed.

RESERVE MEDICAL EQUIPMENT FOR CASUALTY SERVICES (EXCEPT FIRST AID POST), E.G., CONTENTS OF HAVERSACKS, POUCHES, FIRST AID BOXES, AMBULANCE SATCHELS.

Item.	Percentage reserve.
Bandages, triangular	25
Bandages, loose wove, 2½ inches	25
Dressing shell	50
Dressing, First Field	75
Lint, unmedicated, in squares 18″ × 12″	50
Cotton wool, 1 oz. packets	50
Ointment, anti-gas, 2 oz. tins	15
Scissors (7 inches long, 1 blade pointed, 1 blade blunt)	..
Clasp knife	..
Tourniquet	10
Canes for tightening improvised tourniquets	10
Splints, wooden sets	15
Straps for splints	25
Safety pins, large, cards of 6	50
Torch	..
Pencil	15
Labels, casualty identity, packets of 18	..

The question of replenishment of equipment after a raid should be considered.

8. *Personal equipment of the staff.*—

Steel helmet—One per doctor at post.

Civilian duty respirator.—One per doctor at post and one per member of staff.

White overalls—One suit per person engaged in first aid duties.

Where cleansing section for the post is provided—

	Large.	Medium.	Small.
Light oilskin suit	6	4	2
Oilskin gloves, pairs	6	4	2
Gumboots, pairs	6	4	2

ANNEXURE (*a*).

First Aid Posts.

Arrangement of First Aid Posts.—The guidance given in this memorandum as to the spacing of posts, and the size of post required (large, medium, or small) should be closely followed in the preparation of schemes. The number of posts should not be greater than is required by the area to be covered, and the size of individual posts should be adjusted in accordance with the population formula given in the memorandum. Substantial departures from these principles will only be accepted if special reasons were shown.

1. *General considerations.*—A First Aid Post should be designed to receive persons suffering from comparatively minor injuries and unwounded persons whose clothing or skin was contaminated and who would need to be washed and get a change of clothing.

It is intended that First Aid Posts should deal with light, as distinct from serious, cases of injury or gas contamination, i.e., cases requiring treatment which can properly be given initially by personnel trained in first aid. Serious cases, i.e., cases calling for urgent medical or surgical attention, such as may be obtained only at a properly equipped hospital, would derive no benefit from further first aid treatment after having received attention from the first aid party, and might indeed suffer by delay. Such cases should accordingly be sent direct to hospital and should not pass through a First Aid Post at all.

Broadly, the distinction between light and serious cases is whether the casualty is fit and able to walk; although it does not necessarily follow that all cases unable to walk will be serious cases. Thus, simple fractures, sprains, flesh wounds, or burns, whether contaminated or not, should be treated as light cases (even though they are not walking cases) and should be dealt with at First Aid Posts. To treat such cases as serious cases merely because they were unable to walk would risk causing congestion at the hospitals. On the other hand, cases of serious injury, whether or not accompanied by gas contamination, and cases of definite lung irritant gas poisoning (where any exertion is undesirable) should be taken direct to hospital. It is not intended that such cases should receive interim treatment at First Aid Posts.

It is important that these principles should be understood.

Those arriving at First Aid Posts would all require urgent treatment of some sort. Each post must therefore be capable of dealing with minor casualties of all types and of handling considerable numbers after a raid. It would be unsound in principle to rely on being able to divert or transfer casualties to a neighbouring post which was less fully occupied, because of the dangers of delay; but it has to be recognized that in practice this might have to be done in an emergency.

A First Aid Post has to be capable of dealing with casualties arising both from raids in which gas was used and from raids in which no gas was used. The method of working within the post would be different in the two alternatives, but the building must be adapted to meet either case.

Broadly it may be assumed that the number of wounded (i.e., those requiring first aid treatment proper) would depend on the total weight of bombs dropped, irrespective of whether gas was used. The post must therefore have a certain first aid capacity to meet either alternative, the difference between the two sets of circumstances being that if gas were used some of the wounded would first require cleansing treatment.

The substantial factor introduced by the use of a blister gas would be the addition of a number of persons whose skin or clothing was contaminated, though they were not wounded. The result is that the post must contain separate and additional space for dealing with these persons.

The requirements of a post can therefore be considered in two parts—

(i) a First Aid Section, to deal with all wounded persons and persons requiring remedial treatment as a result of being gassed, some of these wounded or gassed persons being possibly also contaminated with blister gas;

(ii) a Cleansing Section, to deal with unwounded persons whose skin or clothing was contaminated with blister gas.

Both these sections will need to be duplicated to provide for casualties of both sexes.

It will be convenient to describe the essential requirements of these two sections separately.

2. *First Aid Section of a post.*—To meet the simplest case, that is to say when no gas has been used, the First Aid section for each sex need consist of three rooms only, namely:—

FA. 1 Reception Room

FA. 2 First Aid Room.

FA. 3 Waiting Room.

The Reception Room, into which casualties would first be admitted, would be a place where their outer clothing could be removed as necessary. They would then pass straight into the First Aid Room, but the Reception Room should be large enough to permit of a certain number remaining there if the First Aid Room was full.

The First Aid Room, leading as directly as possible off the Reception Room, would be the most important room in the section, and should be allotted as much space as possible, to prevent casualties being delayed in the Reception Room.

The Waiting Room would be required for the casualties after they had passed through the First Aid Room. Some would be waiting removal to hospital, others would have to be dressed preparatory to discharge. In both cases a wait of some length might be involved (for instance those to be discharged might need a period of rest), so that considerable waiting accommodation would be desirable. This need not, however, all be in the same building as the post itself. Provided that some waiting accommodation were available in the post, the remainder could be in some other building near at hand.

If a blister gas were used, some of the wounded persons might be expected to be contaminated, and this would entail some change in the working of the First Aid Section. Complete segregation of these casualties at the outset would be desirable in principle, and should be arranged in Posts where space was available. The best course would be to have two Reception Rooms (FA. 1a and FA. 1b), one for uncontaminated and one for contaminated casualties. (Both rooms would be available for uncontaminated casualties if gas were not used.) This division of FA. 1 into two separate rooms, may, however, be difficult in some buildings which are otherwise suitable, through lack of space. In that event working arrangements should be made to pass the contaminated persons received to the cleansing stage as quickly as possible, and to prevent their transferring contamination to others. It must be remembered that contamination is a matter of degree, and in practice the number of wounded persons who will have sustained a dangerous degree of contamination (i.e., who have been splashed with liquid blister gas) is likely to be few, and they will be readily detected. The casualties who have only been slightly exposed to blister gas vapour can safely be left to be treated with uncontaminated persons.

For the grossly contaminated casualties, the first essential is to discard the contaminated outer clothing as soon as contamination is appreciated. If they arrive at the post still wearing contaminated outer clothing and this clothing can be discarded in an open shed before they enter the posts, the risk of their introducing contamination into the Reception Room proper is very greatly reduced.

Where it is impracticable to provide an open shed outside the building, a room near the entrance can be used instead. The windows of such a room should be kept open, to prevent a concentration of gas being built up within it from the contaminated clothing, and the room should be treated as external to the building by being provided with no gas protection and being separated from the rest of the building by an air lock.

Where even a separate room such as this cannot be provided, contaminated casualties must be dealt with in the general Reception Room, under the best precautions possible. Contaminated clothing must be removed out of the room as quickly as possible.

After being undressed, these contaminated casualties could be washed and receive first aid in the general First Aid Room.

The essential requirements of the First Aid Section of a post for each sex may be shown diagrammatically in Figures 1 and 2.

3. *Cleansing Section of a post.*—The Cleansing Section for each sex should also consist of three rooms in series:—

C. 1. Undressing Room.

C. 2. Washing Room.

C. 3. Dressing Room.

There should again be an external shed in which outer clothing should be left. In any case where this is not possible more space should be allowed in the undressing room, so as to reduce the risk from persons jostling one another before the outer clothing has been removed.

The arrangement of the Cleansing Section for each sex can be shown diagrammatically in Figure 3.

4. *Size for a First Aid Post.*—The capacity of the post should obviously be related to the factors which would affect the possible number of casualties to be handled. No estimate of any kind can be given on this point, but areas with a high density of population which are likely, from their geographical situation, to be within range of frequent attacks need more provision than areas of lower density. The precise factors cannot be expressed numerically but the recommendations below are the result of careful consideration and should be followed.

The normal rule is that adjacent posts should be less than two miles apart, so that no casualty should have to go more than a mile to reach a post. Each area where posts are required should be

planned out on a map to show the proposed position of each post, and the area which it would serve—an area of roughly a mile radius, or up to three square miles in extent. The size of the post should then be reckoned according to the following formula:—

Population in area of post.	Size of post required.
30,000—60,000	Large.
20,000—30,000	Medium.
3,000—20,000	Small.

If it is found in the densely populated centres of towns that the planned area of a post contains more than 60,000 people, the area should be replanned so as to bring it within this limit and if necessary an additional post should be arranged.

For areas containing less than 3,000 population within about three square miles a formal First Aid Post should not normally be required.

This grading of posts as large, medium and small is suggested for general guidance only. The actual sizes of individual posts will be governed primarily by the buildings available, and where the buildings provide space which is less than the standard thought necessary, efforts should be directed towards increasing the effective capacity of the post either by arranging for temporary structures to afford extra accommodation for some purposes, or by endeavouring to hasten the rate of flow through the post if a large number of persons reach it simultaneously. The capacity of the post is really governed by the rate of flow through the different sections, and this can be improved by planning the available accommodation in the most convenient manner possible, by efficient equipment, and so on.

A building which suited in dimensions a larger size of post than the population in its area justified could, if no greater expense was thereby incurred, be laid out to the larger size, but could be staffed and run as a smaller post, i.e., as a medium or small post, according to the population in its area.

In addition to the accommodation for patients, every post must have an office and store rooms for administrative purposes, and facilities for the staff to be fed and to rest. The office must be in the post itself, but the store rooms and staff accommodation can if necessary be in a neighbouring building.

It is also possible, though not to be recommended, for the post itself to be divided in two separate buildings. The division can take the form either of a separate building for each sex, or of one building for the two First Aid Sections and another for the two Cleansing Sections. It is, however, essential that if two buildings are used they should be very close together, within sight of one another, since members of the public in need of treatment will not distinguish in advance which section they will need, and they must not be allowed to come to one building only to find that they are sent some distance to another.

The recommended sizes of the different rooms in the three grades of post are given in the following table. The figures must be understood to be approximate, for purposes of general guidance.

For each sex.	Large post.		Medium post.		Small post.	
	Area of room.	Number of patients at one time.	Area of room.	Number of patients at one time.	Area of room.	Number of patients at one time.
	SQ. FT.		SQ. FT.		SQ. FT.	
First Aid Section—						
A 1 Reception—						
FA. 1 (a) general	180	10	130	6	120	4
FA. 1 (b) for contaminated ..	145	5	120	4	100	2
	325	15	250	10	220	6
FA. 2 First Aid	650	24	450	16	350	12
FA. 3 Waiting (if supplementary accommodation is provided elsewhere—see below).	225	10	175	8	130	6
Total ..	1,200	..	875	..	700	..
Cleansing section—						
C. 1 Undressing ..	325	30	225	20	145	12
C. 2 Washing	225	15	170	10	120	6
C. 3 Dressing	400	30	280	20	170	12
Clothing Store	100	..	70	..	40	..
	1,050	..	725	..	475	..
Total, both sections for two sexes.	4,500	..	3,200	..	2,350	..
Administrative office	150	..	100	..	100	..
Total in Post proper ..	4,650	..	3,300	..	2,450	..
Additional accommodation (possibly in another building)—						
Additional waiting accommodation.	550	36	400	25	250	16
Additional Store rooms ..	150		100	..	100	..
Total space required (excluding staff rooms).	5,350		3,800	..	2,800	..

The above calculations have been based on the following space allowances for different purposes:—

Lying cases—

For reception of uncontaminated cases, and for cases in waiting rooms after treatment, 27 square feet per patient.

For undressing and washing, if contaminated, 40 square feet per patient.

For first aid treatment, 40 square feet per patient.

Sitting cases—

For reception of uncontaminated cases, and for cases in waiting rooms after treatment, 7½ square feet per patient.

For undressing of contaminated wounded after prior removal of outer clothing, 10 square feet per person.

For first aid treatment, 15 square feet per patient.

For dressing after washing (unwounded cases), 12 square feet per patient.

Allowance has also been made for furniture and equipment in the rooms.

The amounts of space listed in the above table are designed to permit of the following rates of flow in the posts, expressed as the number of patients of each sex arriving within half an hour. It is assumed that this period would represent the peak inflow following one raid.

The number of lying cases may seem large if all serious cases requiring hospital treatment are to go straight to hospital; but this is to provide a margin of safety, since lying cases occupy so much more space than sitting cases.

Inflow in half an hour (for each sex).	Large post.		Medium post.		Small post.	
	Lying.	Sitting.	Lying	Sitting.	Lying.	Sitting.
First Aid Section ..	20	28	14	18	10	14
Cleansing Section ..	..	90	..	60	..	36

Diagrammatic lay-outs of a Large and Small First Aid Post are given in Figures 4 and 5.

In all schemes for posts in existing buildings the greatest possible simplicity of planning, and avoidance of structural work, are to be aimed at in order to reduce the time which would be necessary on a threat of war to get the post in a condition for use.

5. *Description of particular rooms in post—Open sheds.*—These should preferably not cover the actual entrance to the building to avoid entry of vapour from the discarded clothing; roof is desirable as weather protection merely. The sides should be as open as possible to ensure free ventilation.

FA. 1. *Reception Rooms for wounded.*—An ordinary room, or a partitioned portion of a large hall, etc., will suffice for the general Reception Room (FA. 1a). The contaminated Reception Room (FA. 1b), where provided for the seriously contaminated casualties, should be such that it can be frequently washed down to remove contamination.

In both cases forms or chairs (which will need to be covered with American cloth before use) should be provided for sitting cases, and a w.c. or latrine buckets should be available for patients. Separate provision should be made for the contaminated casualties. Bins with close-fitting lids (e.g., galvanized iron sanitary bins) will be required for contaminated clothing.

FA. 2. *First Aid Room.*—In this room space and light are the main considerations, and access to running water for use by the first aid personnel. Two or three sinks with warm water will be needed for washing the seriously contaminated casualties, and they are washed in a portion of this room. It may well be possible to complete the dressing of wounds of these casualties in this space, and the space would be available for general first aid work in the event of no gas cases being brought in.

FA. 3. *Waiting Room.*—The Waiting Room requires no special equipment or facilities, except that a w.c. or latrine buckets should be available.

There should be a record clerk (probably two clerks) at a table in the Waiting Room to take particulars of all patients who pass through the FA. Section of the post.

If a small waiting room in the post itself is supplemented by additional waiting accommodation in another building, the latter should be regarded as an overflow only, and should not be used while the accommodation in the post is sufficient.

C. 1. *Undressing Room for contaminated unwounded.*—Forms covered with American cloth should be provided for undressing, and bins with close-fitting lids (e.g., galvanized iron sanitary bins) will be required for contaminated clothing. One or two latrine buckets should be provided behind screens; it is inadvisable that contaminated persons should use w.cs. unless their use by other persons can be absolutely prevented.

The construction of this room should, if possible, be such that it can readily be washed down (walls as well as floor) to remove contamination. This washing down should be done as a matter of routine after every day in which the room is used.

C. 2. *Washing Room for contaminated unwounded.*—Bleach and eye treatment may first have to be given, followed by washing. For the latter purpose warm water must be provided, and it is suggested that the simplest procedure will be for each person to go under a shower to get wet, withdraw and soap himself, and then pass under another shower before drying. This scheme can most

economically be met by two sets of showers with the washing space between. For a large post six showers are a minimum, and for a medium post four. For a small post two showers might suffice, but three or four would be better. The water can, if necessary, be led to the showers in rubber piping.

Drainage under the showers may have to be improvised. If the floor is of wood, it can be covered with zinc, lead or linoleum, which should be turned up the walls, at the skirtings, for about a foot. If the floor is of concrete it should be treated with sodium silicate solution (one part of water glass to four parts of water). If there is no fall for drainage the water can be swept to an improvised drain, either in the floor or in the wall. Alternatively a low sloping platform can be built under the showers, with a drain underneath, and the surface covered with linoleum, or preferably with zinc or lead sheeting.

C. 3. Dressing Room for unwounded.—In the Dressing Room there should be a record clerk at a table to take particulars of all persons passing through the C Section of the post and to take charge of the issue of clean clothing. A clothing store would be required in association with this room.

Administrative Office.—It is essential that an office should be provided for the officer in charge of the post. The office must be in the post itself, and should be provided with a telephone.

The administrative work, besides the arrangement of the rota of duties for staffing the post, would include compiling the records of persons passed through the post for transmission to the local authority, and records of the stores supplied and consumed, clothing received and issued; and so on.

Staff accommodation.—It will be necessary that the post itself should include lavatory accommodation for the staff, and at least a small rest room for female members of the staff. In addition, arrangements must be made for feeding the staff and, possibly, where the post might have to be continuously manned, for billeting either the whole staff or at any rate one shift. This latter accommodation can, if necessary, be in a separate building, provided that it is not too far away. The same detached building could, for instance, contain the staff accommodation and the extra waiting room for patients who have passed through the FA section.

6. *Segregation of contaminated casualties and choice of floors.*—It has been said that where necessary contaminated casualties can be treated in the same accommodation as uncontaminated. It remains true that there is every advantage in securing as great a measure of separation as possible between the two types, and, where the available premises allow, this separation should be maintained by providing the additional reception room, and even a separate washing room, for contaminated wounded patients. A separate First Aid room is *not*, however, to be recommended.

Equally it is advisable, if it can be managed, that contaminated patients should be received through a separate entrance from the uncontaminated. This again is a matter which must depend upon the particular building, and separate entrances need not be regarded as essential. It would in fact be possible to plan a post with a common entrance for both sexes, whether contaminated or uncontaminated, and similarly a common exit. The important point to bear in mind is that where several entrances or exits are available in the building the planning of the post should, so far as possible, be arranged to make use of them, with the object of keeping the contaminated apart from the uncontaminated until after they have received cleansing treatment.

Another point is the possibility of using more than one floor. In general a post which is entirely on the ground floor is likely to be simplest. Basements may be suitable in some cases, but often the access to them is difficult both from the point of view of handling stretchers and for the separation of different types of casualties. Stairs are a difficulty for stretcher cases, and an upper floor might, therefore, be awkward to operate. It also has to be remembered that contaminated persons will, to some extent, contaminate all corridors, staircases, etc., through which they pass before being cleansed, and that the accommodation for their undressing and washing should therefore be as near as is possible to the door by which they enter the building. This may be a reason against locating Section C on an upper floor, even though no stretchers would need to be carried to this section. A basement would be suitable for Section C if its access were convenient and provided that proper drainage could be installed.

7. Further points in the planning of posts.—The following general points should be borne in mind in the planning of posts:—

(i) All lights must be obscured after dark, so that none are visible from outside except a dim sign indicating the position of the post.

(ii) To prevent damage from broken glass, roof lights (unless they are of "armoured" glass) should either be boarded underneath or, if light is essential, fine mesh wire netting should be fastened close under the glass.

(iii) All rooms should be warmed in winter if necessary.

(iv) Alternative illumination should be provided in case of failure of lighting supply. Similarly the hot water supply should if possible not be solely dependent upon gas or electricity.

(v) The tanks for storage of water should be ample in size, in case the mains supply is interrupted by bomb damage.

(vi) A shelter for the staff should be provided to protect them against blast, splinters and falling debris.

APPENDIX E.

Ambulance Service.

1. *Control.*—The Officer-in-charge, the Casualty Organization, is in general charge of the Ambulance Service in peace and war. Where more than twenty-five ambulances and cars for sitting cases combined are authorized on the establishment, he should have, to assist him, a Staff Officer or Ambulance Officer who should be responsible under his direction for the organization and administration of the service, the enrolment and training of the personnel, and the maintenance of records. He should be provided with the necessary clerical staff. This officer would be in command of the Ambulance Service after receipt of the Preliminary Warning—*See* also Appendix D, paragraph 1, second sub-paragraph.

2. *Numbers of vehicles.*—Ambulances and care for sitting cases should be provided in accordance with the authorized establishment.

3 *Vehicles type.*—Suitable light vans capable of taking in two tiers 4 stretchers of the size of the Army Pattern (viz., 7 feet 9 inches long, 1 foot 11 inches wide and 6 inches high) should be earmarked. It may be found necessary to earmark private cars of 20 horse-power and over for conversion by the removal of part of the body and the substitution of a van-shaped body. There should be room within the ambulance for the attendant. Suitable methods of conversion of different types of cars are under consideration by the Government of India.

4. *Personnel.*—The establishment is one driver and one attendant for each ambulance; one driver for each car for sitting cases. A reserve of 100 per cent should be enrolled and trained.

5. *Equipment.*—The scale of equipment is—

(*a*) *Personal Protective Equipment*—

One steel helmet—per driver and attendant.

One eye shield—per driver and attendant.

(*b*) *Ambulance equipment—per ambulance*—

4 Stretchers.

8 Blankets.

1 Ambulance satchel containing—

Bandages, triangular	6
Bandages, 2 inches	6
Cotton wool 1 oz. packets	6
Dressings, First Aid Medium	12
Lint cotton, 1 oz. packets	6
Safety pins (large)—cards of 6	3
Scissors	1 pair
Tourniquet (St. John type)	1

6. *Ambulance stations.*—Ambulances and cars for sitting cases should be located at Combined A.R.P. Depots.

APPENDIX F.

First Aid Parties.

1. *Controlling Officers.*—The head of the Casualty Organization is in general charge of the First Aid Party Service in peace and war. Where more than ten First Aid Parties are authorized on the establishment he should have, to assist him, a Staff Officer who should be responsible under his direction for the organization and administration of the service, the enrolment and training of personnel and the maintenance of records. He should be provided with the necessary clerical staff. He would be in command of the First Aid Party Service after receipt of the preliminary warning. An officer of the St. John Ambulance Association might be suitable for the appointment—*See* also Appendix D, paragraph 1, second sub-paragraph.

Where there are more than six First Aid Parties on the establishment, a First Aid Party Group Leader should be appointed to be in command of each group of six parties or less. These group leaders are extra to the authorized establishment.

In each Party one man should be appointed as Leader of the Party and one to act as his Deputy.

2. *Composition of parties.*—First Aid Parties should be composed of 4 men and 1 driver. The party should be provided with a car (other than an ambulance or a car for sitting cases).

Number of parties.—First Aid Parties should be provided in accordance with authorized establishment. A reserve of 100 per cent should be enrolled and trained.

Equipment.—The equipment laid down for a First Aid Party is in Annexure (*a*) to the Appendix.

Depots.—First Aid Parties should be stationed in combined depots where other Air Raid Precautions services (Rescue, Ambulance, etc.) are also stationed.

ANNEXURE (*a*) TO APPENDIX F.

Equipment for First Aid Parties.

(i) Personal equipment—

Steel helmet—one per member of party (including driver).
Eye shield—one per member of party (including driver).
Respirator—one per member of party (including driver).

(ii) Equipment for First Aid Party—

2 stretchers.
2 blankets.
2 ground sheets (only to be provided for stretchers which are not of the "all-metal" type).
4 water bottles with carriers.
3 splints Liston or Splints, leg sets.
21 straps for splints, leg.

Item.	No.
1 Haversack containing the following:—	
Bandages, triangular	36
Canes for tightening improvised tourniquets	8
Cotton wool, 1 oz. packets	6
Dressing shell	18
Dressing shell, First Field	12
Lint, unmedicated, in squares about 18 inches by 12 inches	6
Ointment, anti-gas, 2 oz. tins or jars	8
Safety pins, large, cards of 6	8
Tannic acid jelly (tubes) or substitute	4 (½ oz.)
Clasp knife	1
Scissors (7 inches long, 1 blade pointed and 1 blade blunt)	1
Tourniquet (St. John type)	2
Tourniquet (Samway)	2
Splints, sectional wooden sets	2
Straps for sectional splints	18
Torch, electric	1
Pencil, lead	1
4 pouches each containing the following:—	
Bandages, triangular	9
Canes for tightening improvised tourniquets	3
Dressing shell	6
Dressing shell, First Field	6
Labels, casualty identity packets of 20	1 packet
Ointment, anti-gas, 2 oz. tins or jars	1
Safety pins, large, cards of 6	3
Tannic acid jelly (tubes) or substitute	2 (½ oz.)
Clasp knife	1
Scissors (7 inches long, 1 blade pointed and one blade blunt)	1
Tourniquet (St. John type)	1
Tourniquet (Samway)	1

APPENDIX G.

Rescue service.

1. *Control.*—A responsible technical officer should be placed in charge of the Rescue Service.

Where more than 15 parties are authorized and the officer in charge does not devote the whole of his time to the service he should be provided with one or more Staff Officers with constructional qualifications who should be responsible under his direction for the organization and administration of the service, the enrolment and training of the personnel and the maintenance of records. The necessary clerical staff should also be provided.

The Staff Officer or Officers would after receipt of the preliminary warning be available to assist in the technical direction of the work at incidents.

When there are more than six rescue parties on the establishment a rescue Group Leader with constructional qualifications should be appointed to be in command of each group of six parties or less. The Group Leaders are extra to the authorized establishment.

In each party one man should be appointed as Leader of the party and to act as his Deputy.

2. *Composition of parties*—

(*a*) *Light Rescue Parties.*—These consist of eleven men, viz.:—

One Leader.
Three skilled men.
Six unskilled men.
One driver for the party lorry.

(*b*) *Heavy Rescue Parties*—These consist of nine men, viz.:—
One Leader.
Three skilled men.
Four unskilled men.
One driver for the party lorry.

It is desirable that where necessary in each type of rescue party men should be available who are capable of turning off the gas, water and electricity services.

3. *Number of parties.*—Rescue parties should be provided in accordance with the authorized establishment. The proportion of Light to Heavy Rescue Parties must be decided in accordance with local conditions. A reserve of 100 per cent should be enrolled and trained.

4. *Equipment.*—*See* Annexures (*a*), (*b*) and (*c*) of this Appendix.

5. *Vehicles.*—Lorries having sufficient capacity to carry both personnel and party equipment should be provided for all rescue parties of the authorized establishment.

In the case, particularly of light rescue parties, light trailers which can be detached and dragged over debris should be provided.

6. *Depots.*—Rescue parties should be located in Combined Air Raid Precautions Depots where all other Air Raid Precautions Services are also accommodated.

ANNEXURE (*a*).

(*a*) *Party equipment*—

(i) *Per Light Rescue Party.*—The equipment for a light party is laid down in A.R.P. Handbook —(India) No. 1. In addition the following should be provided:—

Set of rope tackle, 3 sheave—2 sheave	1
Jacks with 10 or 15-ton lift	2
15 feet lengths of wire rope	6
Rubber gloves (pair)	1
200-feet length Manilla rope, 3 inches or 4 inches (where needed)	1
Stretcher harness (set)	1
Webbing bands (for carrying casualties) (set)	1
Scaffold poles for sheerlegs	3
Debris baskets	6
Leather gloves (pair) (per member of party)	1
Firemen's axes (with carrying pouches)	6
Electric inspection lamp, with up to 200 feet of flex	1
Short Ladder (8 or 10 feet)	1
Stirrup hand pump	1
Buckets for use with pump	3
Tarpaulins or stout canvas sheet or sheets of corrugated iron (to protect trapped persons from falling debris until released)	As required
Water-bottles with carriers	2
First Aid Pouches [for contents—*see* Annexure (*b*)]	2
First Aid Box [for contents—*see* Annexure (*c*)]	1

(ii) *Per Heavy Rescue Party.*—Equipment as for a Light Rescue Party and in addition—

3-ton lifting tackle	1
6-feet chains (3-ton lift)	2
20-ton lifting jack	1
Large acetylene flare	1
Portable acetylene cutting outfit (where needed) with asbestos blanket	1

(*b*) *Personal equipment per member of party*—

Steel helmet	1
Civilian Duty Respirator	1
Eye Shield	1

ANNEXURE (*b*).

Contents of Pouch for a Rescue Party (2 per party).

Items.	Number.
Consumable items—	
Bandages, triangular	9
Canes for tightening improvised tourniquets	3
Dressings, first aid, large	6
Dressings, first aid, medium	6
Labels, casualty identity, packets of 20	1 packet
Ointment, anti-gas, 2 oz. tins or jars	1
Safety pins (large), cards of 6	3
Tannic acid jelly, ½ oz. tubes	2
Non-consumable items—	
Scissors	1 pair
Tourniquet (St. John type)	1
Tourniquet (Samway)	1

ANNEXURE (c).

Contents of First Aid Box for Rescue Party (1 per party).

Items.	Number.
Consumable items—	
Bandages, triangular	12
Canes for tightening improvised tourniquets	3
Dressings, first aid, large	6
Dressings, first aid, medium	6
Lint, unmedicated, in squares about 18 inches by 12 inches	6
Ointment, anti-gas, 2 oz. tins or jars	2
Safety pins (large), cards of	4
Tannic acid Jelly, ½ oz. tubes	2
Non-consumable items—	
Clasp knife	1
Tourniquet (Samway)	2
Splints, leg, sets	2
Straps for leg splints	14

To be carried separately from box.

APPENDIX H.

Air Raid Precautions Depots.

1. *General considerations.*—Air Raid Precautions depots were intended to be provided for each separate Air Raid Precautions Service, but consideration of schemes in detail proves that this will result in a multiplication of small depots at each of which the same facilities will have to be provided. This is obviously uneconomical. There are also other important difficulties—

(*a*) Administration of many small depots will be difficult.

(*b*) Many more telephone lines will have to be maintained in raiding conditions.

(*c*) Control is difficult; because, services are unduly dispersed.

(*d*) The fact that each service has its separate Air Raid Precautions depots will result in several messages instead of one being sent from the Control Centre when parties of different services are required. This will entail serious delay.

2. In view of the above considerations the principle of Combined Air Raid Precautions depots has been established, and depots will be set up at which will be located—

First Aid Parties.
Ambulances.
Rescue Parties.
Decontamination Parties.

3. *Control.*—The Air Raid Precautions Controller will be responsible for—

(*a*) The decision as to the number of Air Raid Precautions depots necessary and their location.
(*b*) The planning of the layout of each depot.
(*c*) Allotment of accommodation.
(*d*) Structural alterations and protection.
(*e*) Issue of orders for the management of the Air Raid Precautions depot to the Depot Superintendent (*see* below).
(*f*) Periodical inspection of Air Raid Precautions depots.

4. *Depot Superintendent.*—A Depot Superintendent, who may require one Deputy when Air Raid Precautions Services are standing to permanently, should be appointed for each depot. He should not be a member of any particular Air Raid Precautions Service and should be directly responsible to the Air Raid Precautions Controller.

5. His duties are generally of an administrative nature though he has certain operational functions. His duties will include—

(*a*) Despatch of Air Raid Precautions Services to incidents in accordance with orders from the Report Centre. In every exceptional circumstances he may despatch services on his own responsibility, but he should always report such action to the Report Centre.

(*b*) Transmission of Air Raid Warnings to Air Raid Precautions Services located in the depot and supervision of action ordered to be taken on their receipt.

(*c*) Constant practice of action to be taken—

(i) On receipt of Air Raid Warnings.

(ii) In case of fire in the depot.

(*d*) General administration of the depot in accordance with his instructions.

(*e*) Storage of equipment.

(*f*) Ensuring adherence to the Depot Routine.

(*g*) Maintenance of discipline and morale.

(*h*) Welfare of personnel in the depot.

(*i*) Provision of Depot Guard which is formed from the personnel located at the depot.

6. *Air Raid Precautions depot staff*—

Depot Superintendent	1 plus 1 Deputy.
Telephonist	1 plus 2 Reliefs.
Clerk	1
Storeman	1
Messing staff	Numbers depending on size of depot.
Sweeper	1 or 2 in large depots.

7. *Sitting of Air Raid Precautions depots.*—As a very general guide, in order to prevent delay in sending services to an incident, Air Raid Precautions depots should be so spaced that services can get to an incident within 10 minutes after receipt of the message ordering them out.

The whole area should be examined from the point of view of road communications. It may then be found that there are certain parts into which access is difficult and in which it may be necessary to establish a depot. A decision should then be made as to the rough areas each depot would normally serve. The number of Air Raid Precautions Services required to serve any particular area should bear approximately the same relation to the total services as does the population of that area to the population of the whole area. This will give a guide as to the size of depots required.

In a small area where the number of Air Raid Precautions Services is small only one Air Raid Precautions depot may be necessary, but in a large area several depots may be needed.

It is suggested that not more than 200—250 Air Raid Precautions personnel should be located at one depot. A balance between too great a dispersion of services and too great a concentration must be maintained.

Depots should be easy of access to Air Raid Precautions vehicles and should have good turn round space.

Vehicles should be protected against weather.

Accommodation in an Air Raid Precautions depot.—The following accommodation is necessary in a depot where the services are required to stand by throughout the 24 hours:—

(*a*) *Administrative office* with telephone.

(*b*) *Operational office with telephone.*—This must be protected against blast, splinters and be capable of being rendered gas proof and rendered secure against the fall of debris. It might well be in the shelter.

(*c*) *Rest and recreational room.*—Sufficient space for all personnel based on the depot. This room is also used for instructional purposes.

(*d*) *Sleeping accommodation.*—Sufficient space for all personnel based on the depot.

(*e*) *Shelter.*—Sufficient space for all personnel based on the depot.

Standard of protection.—Secure against blast, splinters and fall of debris and capable of being made gas proof.

(*f*) *Mess room.*—Sufficient space for 50 per cent of relief on duty if meals taken in two relays.

(*g*) *Cookhouse.*

(*h*) *Lavatories.*

(*i*) *Accommodation for washing and dressing.*—This should provide—

(i) Undressing room.

(ii) Washing room.

(iii) Drying space.

(iv) Dressing room.

(v) Heating arrangements where necessary.

(*j*) *Store* for equipment not kept normally on lorries.

(*k*) Adequate lighting, ventilation, heating and cooling is needed.

(*l*) There should be a suitable yard in which vehicles of the parties can be parked.

NOTE.—In towns where there are no paid personnel authorized on the establishment items (*a*), (*c*), (*d*), (*f*) and (*g*) should not be provided.

ENCLOSURES.

(1)

Letter from the Government of India, Civil Defence Department, New Delhi, dated 11th November 1941, No. 78/309/41-A.R.P. (Medl.).

[Mobile First Aid Posts.]

I am directed to address the Provincial Government on the above subject which has been under the consideration of the Government of India.

2. It is suggested that in the less densely developed and populated areas fixed aid posts might be replaced by mobile first aid posts which could be used, in effect, to set up an aid post as and where required. Experience in England has shown that mobile first aid posts can very largely be used instead of fixed aid posts in the suburban areas and that even in thickly populated areas they are likely to prove a useful replacement or reinforcement of the fixed aid posts which may be destroyed or over run by large number of casualties.

3. The Provincial Government might consider these proposals in the light of local conditions particularly in big cities, and inform the Government of India of their views. If they accept the necessity for such posts their requirements together with a rough estimate of their financial effect may also be furnished.

It may be pointed out that these mobile first aid posts will not be in addition to those fixed aid posts which have already been sited and sanctioned but the mobile posts should replace some of the fixed first aid posts according to the local conditions in a way that the total expenditure involved in both kinds of posts will not vary to any considerable extent from that anticipated on the fixed ones already sanctioned.

4. In some cases it may be found that a mobile first aid post can replace as many as two to three static posts.

5 The scale of equipment for and a description of a mobile first aid post are sent herewith; this scale is more or less the same as that for a small fixed first aid post laid down in Government of India, Home Department letter No. 78/296/41-A.R.P., dated the 18th September 1941.

6 *Financial.*—Expenditure in this connexion should not be incurred until sanctioned in principle by the Government of India.

7. It is requested that the matter may be treated as urgent.

SUB-ENCLOSURES.

MOBILE FIRST AID POSTS.

The mobile first aid post is to consist of a motor vehicle, such as a big truck or Ford van, carrying the equipment of a fixed first aid post and also the medical staff. The auxiliary staff attached to a mobile first aid post should travel separately to the scene of the incident whenever practicable.

The intention in using mobile first aid post is partly to enable a complete first aid medical unit to proceed to the scene of major air raid damage, there to set up, either in the shelter of any convenient building or even, if the weather is fine, in the open air and provide immediate medical attention and treatment, and partly to reinforce the fixed aid posts. It is not proposed that first aid should be carried out inside these vehicles.

It is proposed that the first aid equipment to be carried in the vehicle should be contained in cupboards which can be lifted in and out. A detailed description of these cupboards, together with dimensions and drawings, is given in Appendix A. The appendix also contains the schedule of equipment and stores arranged to show how they can conveniently be packed into the cupboards, and description of certain other furniture that will be needed.

In order to carry the cupboards, and the necessary equipment, the interior of the vehicles must be at least 8 feet 6 inches long, 5 feet wide and 6 feet high.

Personnel—

1 Doctor.
1 Fully trained nurse, if available.
2 Nursing Orderlies.
2 Stretcher bearers.
2 Lay personnel (one to act as messenger; one to fill in forms and keep records, etc.).

Stationed at.—On the declaration of a state of emergency, these vehicles might most suitably be stationed at hospitals, and they would remain at the hospital until required to proceed to the scene of an incident.

If it is not practicable to have a mobile first aid post at a hospital they must be located at convenient centres or combined Air Raid Precautions depots—and it must be remembered that linking up with a doctor is essential.

APPENDIX A.

The cupboards to contain the first aid equipment are to be made up on the expanding book-case plan, and constructed of three ply panels, in wooden framing and fitted with removal doors. Drawings are shown at the end of this appendix.

The basic unit consists of—

A bottom cupboard—A.
A middle cupboard—B.
An upper cupboard—C.

There will be two of these complete units.

The cupboards A, B and C are dowelled to fit each other, and the upper cupboards when empty can be up-ended to form Aid-Post furniture or used to form shelving. The lower cupboard would make a convenient table. Each piece of furniture has a scheduled list of contents as shown below.

The inside measurements of the cupboards are as follows:—

	Length.	Breadth.	Height.
	INCHES.	INCHES.	INCHES.
A	36	20½	30
B	36	16½	16
C	36	12½	12

Cupboard A is to be fitted with a transverse shelf 18½ inches above the level of the floor of the cupboard, and one of the two cupboards A in each unit is to be tin-topped for use as a table for a heating unit.

One of the two cupboards C in each unit will hold dangerous drugs, and must be fitted with lock and key to comply with D.D.A. regulations. In the same cupboard will be carried a box intended for the reception of:

(1) Surgical instruments, ligatures and syringes;
(2) anaesthetic equipment; and
(3) dangerous drugs.

The inside measurement of the box is to be:

Length—17". Breadth—7½". Height—6½

The box should be fitted with a removable tray, for carrying the items under (1) above. The depth of the tray should be 1" and it should be divided up by partitions for syringe cases and instruments.

In addition to the two complete sets:

A 1.	B 1	C 1
A 2.	B 2.	C 2

there will be required a long box, A 3, for splints, sticks, crutches, etc., and this box may be used as a sitting bench for personnel in transit.

Length—5' 6". Breadth—15". Height—17".

Two packing cases (A 4) for carrying heating and lighting units must also be provided.

In addition to these units of furniture filled, the vehicle must carry:

Trestles for stretchers	2 pairs
Watercontainers, three gallons	2 „

The Mobile First Aid Post should be packed as follows:—

Cupboard A 1.

Wool, cotton absorbent	2 lb.
Wool, cotton non-absorbent	2 lb.
Lint (in one lb. and 4 oz. packets)	2 lb.
Gauze (absorbent, 25 inches wide in packets of 3 yards folded) ..	6 packets.

Cupboard B 1.

Dressing, First Field	25
Bandages, triangular	24
Do. loose wove 4" × 6 yards	100
Do. do. 2½" × 6 yards	100
Do. Many tail	3

Cupboard C 1.

Acreflavin	25 tab.
Lysol	8 oz.
Liq. iodi mitis	4 oz.
Ol. ricini	1 oz.
Spt. Ammon. Aromat.	1 lb.
Soda bicarbonatis	8 oz.
Copper sulphate 2 per cent sol.	4 oz.
Ointment, antigas 2 oz. tins or jars	8 tins.
Tannalep (Tannic Acid Jelly) 2 oz. tubes	2 tubes.
Adhesive plaster	1 spool.
Safety pins, tins of 36	1
Eye shades	3
Tourniquets	2
Bath eye	1
Brushes, nail	2
Razor	1
Strap, leather	1
Hair clipper	1
Torches	3
Medicine glass 2 oz.	1
Scissors, stretcher bearers' (7 inches long, 1 blade pointed, 1 blade blunt).	2
Spirit methylated	4 pints.

Cupboard A 2.

Fish kettle sterilizer	1
Basin, kidney shaped	2
Bowl E.I., 8 inches round	2
Basin E.I. washing, 12" × 14" each	1
Trays E.I. dressing, 11" × 9" × 2"	1
Irrigator E.I., 2 pint complete	1
Jug E.I., graduated 1 pint	1
Jar, dressing, 10" × 7" E.I. with cover	2
Buckets, water (pail zinc)	1
Bed pan E.I.	1
Urine bottle E.I.	1
Water-proof sheeting I.R. width 36 inches	3 yards.
Feeding cups E.I.	1
Mugs E.I.	3
Soap, hand	2 cakes.
Candles	6
Match box	6

Cupboard B 2.

Surgeon overalls	One per Medical Officer on duty and one per nurse on duty.
Surgeon R. Gloves	
Surgeon towels	6
Hot water bottles I.R., 12″ × 8′	4
Splinting wood, Gooch's 24″ × 18″	3 pieces.
Splints, wood, common arm sets of 8	2 sets.
Straps and buckets for splints	3 dozen.

Cupboard C 2.

Box for instruments, syringes, drugs, anæsthetics casuality—Tie-on-lables, pencil, etc.

In Box in C 2—	
Surgical instrument box or satchel—	
Forceps, artery	6
Do. Dissecting	1
Do. Sinus	1
Do. Dressing	2
Do. Splinter	1
Do. (Sterilizor) cheatles	1
Probe	1
Scissors, surgical	2 pairs.
Scalpel or knife, bard parker handle and blade No. 22	1
Tongue depressor metal	6
Catheter No. 8 I.R.	1
Syringe record, 10 c.f. with 2 needles in case	1
Syringe hypo, 2 c.f. with 2 needles in case	2
Spare needles for syringes box of	6
Silk surgical braided sterile No. 3 (T) in vial	1
Catgut sterilized, plain size, 'O' 5 feet strand in tube	2
Catgut sterilized, plain size, No. 3, 5 feet strand in tube	1
Silk work gut hank	1
Needles (suture) assorted	12
Anæsthetic outfit—	
Mask	1
Airway, medium R.I.R.	1
Clip, tongue (cross action)	1
Mouth gag (Doyen)	1
Aether	8 oz.
Chloroform	4 oz.
Ol. Ric. in drop bottle	1 oz.
Standard drop bottle for anæsthetic	1
Procaine 1 per cent, 3 c.c. ampules	6
Small box containing drugs—	
Morphine Sulph. ¼ gr. 1 c.c. ampules (boxes of 6)	2 boxes.
Nikethamide 1·7 c.c. ampules (box of 5)	2 boxes.
Liq. Adrenaline hydrochlor—rubber capped bottle	1 oz.
Ung. Atrepine (1 per cent in ½ oz. tubes)	1 tube.
Sera A.T.S. ampules	3

Box A 3.

Thomas's splints knee	3
Long Listons splints (sets of six)	3 sets.
Posterior splints with foot pieces	4
Crutches	2 pairs.
Walking sticks	3
Two packing cases—A 4—	
Emergency heating and lighting units (Primus stove)	1
Urn, 3 gallon	1
Hot plate	1
On Floor—	
Water containers, 3 gallons	1 or 2
Stretcher trestles	1 pair.
Bleach powder	7 lb.
Hurricane lamps	3
Contents of Tea Box—	
Tea	2 lb.
Condensed milk	2 lb.
Sugar	3 lb.
Cups and saucers	3 sets.
Sauce pan	1
Spoons	3
Kettle E.I.	1

Maintenance of equipment.—Every care must be taken in the storage and use of this equipment, particular attention should be paid regarding the care necessary in drying nickel-plated surgical instruments and lubricating screws and joints. Enamel iron sterilizers, basins, bowls, etc., suffer damage by being placed in direct contact with the flame. The source of heat should be spread uniformly over the surface by, for instance, placing wire gauze (to be obtained locally) between the flame and the sterilizer. The heat should be moderate at first and gradually increased as the water warms up.

(2)

Letter from the Government of India, Home Department, New Delhi, dated 3rd/4th March 1941, No. 78-45/40-A.R.P.

[Structural precautions in Class I (Civil) towns.]

I am directed to say that the Government of India have had under consideration the measures of structural precautions necessary in India against damage by air raids in respect of buildings used for certain air raid precautions services. The conclusions at which the Government of India

have arrived at are that such structural precautions are necessary in class I towns in respect of the buildings used for the following purposes:—

Air Raid Precautions Control centres.
Fire stations.
Gas Defence centres.
Rescue and Demolition Party depots.

2. The Government of India do not consider that structural precautions against air raid damage for other air raid precautions services are necessary under present conditions. Nor are they prepared under present conditions to reimburse to Provincial Governments any expenditure which they may see fit to incur on structural precautions against air attacks in Police, Hospital and Fire Service buildings, other than fire stations, or in the living accommodation of the Police and Fire Service personnel.

3. The Government of India request all Provincial Governments to prepare as rapidly as possible schemes for structural precautions in the buildings mentioned in paragraph 1 of this letter, and to submit such schemes for the approval of the Government of India. The degree of structural precautions required is that sufficient to provide lateral protection against splinters of high explosive bombs not weighing more than 500 lb. exploding not less than 50 feet away, and protection against a direct hit with an incendiary bomb weighing 2 lb. The thickness of material required is described on page 1 of the Air Raid Precautions Handbook No. 1 issued by the Home Department.

(3)

Letter from the Government of India, Home Department (A.R.P. Section), New Delhi, dated 16th June 1941, No. 78-45/40-A.R.P.

[Structural precautions for Air Raid Precautions buildings.]

I am directed to refer to Government of India, Home Department, letter No. 78-45/40-A.R.P., dated the 4th of March 1941, and to state that in addition to the buildings for which structural precautions have to be prepared, the Government of India have decided that the following buildings should also be made blast and splinter proof and secure against falling debris:—

(*a*) Shelter for any staff over and above those on duty in the Control and Report centres.

(*b*) One room in each warden's post.

(*c*) Shelter for wardens who may have to report to a pre-arranged place in a section for which they are responsible.

(*d*) Shelter for the staff at each First Aid post.

(*e*) Operational offices in depots, also shelters for all Air Raid Precautions personnel based on those depots.

This decision has been made as Air Raid Precautions workers will have to be on duty in all these buildings during air raids.

The protection of gas defence centres and rescue depots should be held in abeyance pending further guidance on the organization of Air Raid Precautions depots.

The Government of India request all Provincial Governments to prepare schemes for structural precautions in the abovementioned buildings.

A note on protection against falling debris is attached for ready reference; it may be possible to amplify this further in the near future.

SUB-ENCLOSURE.

Recommendations for strengthening floors over shelters in buildings.

[Debris loading—Working stresses—Method of design—Supports to beams or slabs—Protection of new members against corrosion.]

Debris loading.—For shelters in basements it is necessary to provide a floor above the shelter having sufficient strength to support the fall of debris consequent on demolition of the superstructure. The superimposed loads shown in the table below should be assumed as a reasonable provision against the fall of debris. These loads are additional to the superimposed and dead loads which the floor is designed to carry for normal purposes and support must be given where necessary to the floor panels as well as to main beams and joists.

TABLE.

Additional superimposed loads to be assumed on the roofs over shelters to provide against the fall of debris from the superstructure.

(1) For buildings when loads are carried on load-bearing brickwork or masonry—

Number of storeys over.	Debris load to be assumed lb. per square feet of floor area in addition to normal load.
2	200
3 or 4	300
More than 4	400

(2) For buildings when loads are carried on steel or reinforced concrete frames the debris load may be assumed at 200 lb. per square foot of floor area, irrespective of the number of storeys over.

(3) For buildings which consist of a combination of load-bearing brick work or masonry with framed construction, some intermediate values for debris loads should be taken, based on the judgment of competent architects or engineers.

Permissible stresses.—The additional support to roofs over shelters should be designed according to the normal working stresses laid down in the various building regulations at present in force. *No increase of working stress is permissible.*

Methods of design.—The floor over shelters may be strengthened by providing additional support to the panels, and by decreasing the effective span of beams by the provision of suitable struts.

NOTE.—The superimposed loads given in the Table are a reasonable provision for the collapse of buildings of normal construction. If the buildings have abnormal features such as heavy colonnades, pediments, cornices, etc., which would be likely to produce abnormal debris loads, higher values should be taken according to the judgment of competent architects or engineers. The superimposed loads given in the Table are only sufficient to cover the fall of moderate amounts of very high machinery and plant. They are not sufficient to cover the fall of heavy machinery nor will it often be economically possible to streng hen the roof over a shelter sufficiently to withstand the fall of any but very light machines. No basement in which the fall of machinery or plant would constitute a serious danger to the occupants should be selected as a shelter.

Supports to beams and panels.—Where the effective span of beams or panels is shortened by the introduction of additional supports, due regard must be paid to the original design. Thus, in the case of reinforced concrete members the position of supports must be considered in relation to the arrangement of the reinforcement since additional support in the wrong position might actually weaken the member. It will usually be found necessary in practice to refer to the original drawings showing such details as weight and dimensions of steel beams and girders, and size and distribution of reinforcement in reinforced concrete structures.

Protection of beams and columns supporting debris loads.—All beams, sheeting and columns introduced to strengthen floors against debris loads must be treated where necessary to secure adequate resistance to corrosion. In the case of structural steel work this may be assumed to be afforded by paint treatment not inferior to the following:—

> After removing all loose scale, rust, oil and grease the steel shall be coated with not less than one coat of red lead or iron oxide paint followed by at least one coat of good paint of finishing quality, or with not less than two coats of properly compounded bituminous paint.

Concrete encasement of steel members introduced for the support of debris is not necessary but where, for the sake of permanence and freedom from paint maintenance, it is preferred to encase members in concrete there is no objection to this being done. In any case proper concrete encasement of steel members is desirable in industrial premises where any substances likely to induce corrosion of steelwork are used.

(4)

Letter from the Government of India, Home Department (A.R.P. Section), New Delhi, dated 8th July 1941, No. 78-45/40-A.R.P.

[Structural precautions for Air Raid Precautions buildings.]

I am directed to refer to Government of India, Home Department, letter No. 78-45/40-A.R.P., dated the 16th June 1941, and to state that the authorized structural precautions apply to Class II as well as to Class I towns.

In view of the revised nomenclature introduced by Government of India, Home Department, letter No. 78-207 (1)/41-A.R.P., dated the 3rd July 1941, the authority to carry out structural precautions mentioned in Government of India, Home Department, letter No. 78-45/40-A.R.P., dated the 3rd/4th March 1941, in respect of Gas Defence Centres (now called Decontamination Depots) and Rescue and Demolition Party depots (now called Rescue Party Depots) is cancelled, except where the work was carried out or was put in hand before the date of receipt of this letter. Decontamination depots and Rescue Party depots where established should be treated as any other Air Raid Precautions depot, *e.g.*, the operational office and the shelter for the Air Raid Precautions personnel are the only portions of the depot to be protected.

Government of India, Home Department, letter No. 78-45/40-A.R.P., dated the 3rd/4th March 1941, authorized structural precautions for Air Raid Precautions Control centres. Report centres are also to be protected.

Further to Government of India, Home Department, letter No. 78-45/40-A.R.P., dated the 16th June 1941, I am to say that the degree of protection to be afforded is that sufficient to provide lateral protection against the blast, effect and splinters of high explosive bombs not weighing more than 500 lb. and exploding not less than 50 feet away and protection against the direct hit of any incendiary bomb weighing 2 lb. In addition the ceiling of the portion of the building to be protected should be made capable of bearing the weight of the debris, should the superstructure collapse.

(5)

Letter from the Government of India, Home Department (A.R.P. Section), to all Provincial Governments and Chief Commissioners, dated 11th September 1941, No. 78-215/41-A.R.P.

[Ambulances—Suggested stretcher carrier frame for lorries.]

I am directed to refer to paragraph 3 of Appendix E of Home Department letter No. 78-194/41-A.R.P., dated 26th June 1941, and to forward diagrams together with a description of a suggested stretcher carrier frame for use in lorries which may be converted as ambulances.

The carrier is designed to take the standard army pattern stretcher (7 feet 9 inches by 1 foot 11 inches by 6 inches) and to be placed in lorries of a suitable size at short notice.

It is hoped to forward suggestions on the conversion to ambulances of different types of private cars shortly.

The stretcher carrier frame.

To avoid interfering with the body of a bus or lorry in an attempt to adapt it to take stretchers, and so that the stretcher itself also remains unaltered the stretcher carrier frame is devised. The frame is simple of construction, consisting of lengths of wood, two lengths of angle iron and eight right-angled pieces of iron to strengthen the corners.

The diagram with specifications render an elaborate description unnecessary. The runners on which the stretcher will slide into the frame are made of 7½ feet lengths of 1½ inches angle iron.

These have not been placed close up to the wooden side bars of the frame but a little space is given so that no difficulty may be met with in pushing home a loaded stretcher carrying a patient covered perhaps with a blanket.

This of course applies only to the pushing home of a stretcher on the base of the frame.

It is important to note that the distance between the vertical parts of the angle iron lengths must be 20 inches—*not more*. This is important if the standard stretcher (army pattern) is to slide easily along the runners.

Again if the distance is 20 inches there is no possibility of the stretcher sliding off the runners at any point.

In the case of 3-ton lorries, carrying four stretcher frames, difficulty may be experienced in running the loaded stretcher through the first frame into the frame ahead, in the forepart of the lorry.

This difficulty is got over by using a rope with a hook at one end rove through a block, the latter fixed to the frame of the lorry by means of a hook. The end of the rope with the hook is passed down the centre of the frames and the hook fixed to the iron crossbar under the stretcher, which has been placed on the runners. The stretcher is then pulled along through the outer frame and on, into the frame in front.

The procedure, is reversed in unloading. The stretcher is simply pulled directly out by means of the hook and rope.

(6)

Letter from the Special A.R.P. Officer, to the Chief Secretary to Government, Public (A.R.P.) Department, dated 7th October 1941, No. 1868/41-A.R.P.

[War—A.R.P.—Ambulances—Stretcher carrier frame for lorries. *Reference.*—Public (A.R.P.) Department Memorandum No. 480-W-15, dated 24th September 1941.]

Under the Madras scheme as approved by the Area Committee, I have the honour to state it is proposed to equip each Combined A.R.P. Depot with two pucca ambulances belonging to the A.R.P. to form the nucleus of the larger number which will be called in on receipt of the alarm.

I do not think that lorries are altogether suitable for conversion to ambulances as their springs are very rigid and would cause considerable discomfort and possible danger to seriously injured persons. Lorries should, I think, only be considered in the last resort for ambulances.

The Berridge equipment has been proposed for use in earmarked buses here. This equipment is very simple and cheap to fix up costing only Rs. 52 per bus. It is also quicker to assemble taking only 10 to 15 minutes for a trained crew to instal.

The apparatus proposed by the Government of India would not be suitable for our buses unless it was made collapsible or were to be put together in parts in the bus itself. Again there is going to be considerable difficulty in inserting the bottom stretcher which will have to be done through the sides of the apparatus as it will not be possible, owing to the bus ends being closed, to push it through from the end. Further it does not seem very desirable as in the case of the bottom stretcher that man's head would be on the bus floor level, where there will be a certain amount of dust floating about. This defect does not appear in the Berridge equipment where the bottom stretcher is well raised from the ground.

With the rather bulky equipment proposed by the Government of India a large amount of space will be taken up for storing it in the various A.R.P. Combined Depots. With the very simple Berridge equipment the minimum storage space is required merely for the wall brackets, leather straps and stretchers.

With the Berridge equipment the bus can continue to run on the streets on its normal business with the first stage of the equipment installed until the siren sounds when it will immediately proceed to its nearest Depot, instal the second and final stage of its equipment (which takes ten to fifteen minutes) and hardly need keep off its normal duties for any length of time. Under the method proposed by the Government of India it would, I think, be necessary to take the bus off its normal duties from the time of preliminary warning is received.

The proposed equipment would be very suitable for use in lorries only but I consider the Berridge equipment is better for use in buses.

(7)

Government Memorandum No. 480/41-23, Public (A.R.P.) Department, dated 11th October 1941.
[War—Air Raid Precautions—Ambulances—Stretcher carrier frame for lorries.]

Copies of letter No. 78/215/41-A.R.P., dated 11th September 1941, from the Government of India, Home Department, and No. 1868/41-A.R.P., dated 7th October 1941, from the Special A.R.P. Officer, Madras, are forwarded to the District Magistrate of Vizagapatam / District Magistrate of East Godavari / District Magistrate of The Nilgiris / Administrative Officer, Cochin Harbour., in continuation of G.O. No. 1464, Public (War), dated 15th July 1941. He is informed that the Government of Madras consider that this equipment is suitable where it is proposed to convert *lorries* into temporary ambulances. When it is proposed to use *buses* the Government consider that the Berridge equipment as used in Madras is the more suitable as well as being cheaper and simple in operation.

(8)

Letter from the Joint Secretary to the Government of India, Home Department (A.R.P. Section), dated 30th July 1941, No. 78/208/41-A.R.P.

[Appointment of paid Air Raid Precautions officials to assist Controllers and Heads of Services.]

I am directed to refer to Government of India, Home Department, letter No. 78/194/41-A.R.P dated the 26th June 1941, and No. 78/209/41-A.R.P., dated the 5th July 1941, regarding the organization of Air Raid Precautions training, and to say that consequent on the increase in the establishment of Air Raid Precautions personnel, the Government of India consider that there will be a need for the appointment of a certain number of paid officials to assist Controllers and Heads of Services. The Government of India are therefore prepared to meet their agreed share of expenditure described in the following paragraphs of this letter.

2. An Air Raid Precautions Officer should be appointed for every Class I and II town. His duties would include—

(*a*) the preparation and co-ordination of Air Raid Precautions Schemes.

(*b*) training as set out in Home Department letter No. 78/209/41-A.R.P., dated the 5/7th July 1941, paragraph 4 (*a*).

3. It is essential that Air Raid Precautions Officers in Class I and Class II towns with population of over 50,000 should be full-time officers, and it may be desirable that they should be full-time officers even in the smaller Class I or Class II towns. In Class III towns, however, normally the Air Raid Precautions Officer should be a part-time officer.

4. It may often be possible for the Air Raid Precautions Officer in Class I and Class II towns to be personally responsible for the duties described in paragraph 1, but it may be found necessary for him to be assisted by one or more specially appointed Training Officers, who would be responsible to him for training arrangements as set out in paragraph 2 (*b*) above.

The following is laid down as the scale of Training Officers and their assistants. It must be emphasized, however, that the exact number of officers required will vary considerably under local conditions. In towns with population of less than 250,000 the Air Raid Precautions Officer should not ordinarily require a Training Officer. In towns with populations between 250,000 and 500,000 the Air Raid Precautions Officer will normally need one Training Officer. In towns with populations between 500,000 to 1,000,000 one Training Officer and one or possibly two Assistant Training Officers will be required. The suggested rates of pay are as follows:—

	RS.
Training Officer	200—300
Assistant Training Officer	100—150

5. Whilst every endeavour should be made to utilize the services of unpaid Air Raid Precautions Instructors, Class I, II and III it will probably be found necessary to appoint a certain number of whole-time permanent instructors and to pay part-time instructors for each period of instruction given. The employment of whole-time instructors is often a more economical arrangement than the payment of part-time instructors for each lesson given. Instructors will be necessary in Class I and Class II towns, and if a suitable volunteer cannot be found it may also be necessary to appoint a paid instructor in Class III towns.

6. The exact number of instructors cannot be laid down for each town nor can the approximate number of those likely to be required be given. But I am to ask that when applying to the Central Government for their agreement to contribute to a share of the expenses of the Air Raid Precautions Instructors, the Provincial Governments will report the following facts:—

(1) Whether instructors will work part-time or whole-time;

(2) the qualifications and experience of instructors;

(3) the number of Air Raid Precautions personnel to be trained;

(4) the time in which the training is to be completed.

(NOTE.—As Provincial Governments are aware, Class I and Class II instructors are those trained at the Air Raid Precautions School and class III instructors are those trained locally. In the case of Class I and Class II instructors it is also necessary to insist on a minimum educational standard which should be matriculation.)

The following are suggested as suitable rates of pay for instructors:—

Class I and Class II Instructors (i.e., those *trained* at the Air Raid Precautions School, Calcutta)—Rs. 70—80 per mensem.

Class III Instructors (i.e., those trained locally by Class I or Class II Instructors)—Rs. 40—50 per mensem.

If instructors are employed part-time, it is suggested that the following scale of payment per lecture would be suitable:—

Rs. 2 per lecture by Class I and Class II Instructors and Re. 1 per lecture by Class III Instructors.

7. *Staff officers to Heads of Services—Specialist Instructors.*—The Head of an Air Raid Precautions Service is responsible for—

The organization and administration of the service.
The enrolment of personnel.
The safe custody of equipment.
The maintenance of records of personnel.
The organization and supervision of the training of the service in—
(*a*) the special duties of the service,
(*b*) training of leaders and deputy leaders of parties, and
(*c*) team training.

(*See* Air Raid Precautions Training Manual, No. 2, pages 8-11, 28-39 and Home Department letter No. 78/147/41-A.R.P., dated the 25/28th April 1941, "Air Raid Precautions Training Manuals, Nos. 1 and 2, Additional Syllabus.")

In some instances the Head of the Service may himself be able to carry out those duties but it will often be advisable to appoint one or more permanent paid staff officers to assist him. This point has been dealt with in Appendices A to H to Government of India letter No. 78/194/41-A.R.P., dated the 26th June 1941.

In addition Specialist Instructors specially trained under arrangements made by the Head of the Service to give the instruction mentioned in (*a*), (*b*) and (*c*) above will be required.

(*See* paragraph 8 of Home Department letter No. 78/209/41-A.R.P., dated the 5th July 1941.)

Whilst every endeavour should be made to utilize voluntary unpaid workers it may be found necessary to appoint whole-time Specialist Instructors and to pay instructors who volunteer to give lectures in their spare time.

The suggested maximum rates of pay for these officers are given below and any payment in excess of these rates should only be made with the prior concurrence of the Government of India:—

Staff officers to Heads of Services—(*a*) *All Services except Wardens Services.*—From Rs. 150—200 per mensem depending on the extent of his responsibilities.

(*b*) *Wardens Services*—

For a town not organized in divisions—Staff Officer to Chief Warden from Rs. 150—200.

For a town organized in divisions—
Staff Officer to Chief Warden—Rs. 250—300.
Staff Officer to Divisional Warden—Rs. 150—200.

Specialist Instructors—

Whole-time Specialist Instructors—Rs. 70—80.

Part-time Specialist Instructors—Rs. 2 per lecture or period of practical instruction of approximately 1 to 1½ hours duration.

Medical Officers—

Rs. 5 for conducting an examination in First Aid under the St. John's Ambulance Association Rules.

Rs. 5 for each lecture or period of practical instruction of approximately 1 to 1½ hours duration.

8. This letter cancels Home Department letter No. 78/130/41-A.R.P., dated the 2nd April 1941.

1941.